The SOUTHEASTERN GEOGRAPHER

Volume I

1961

CONTENTS

THE CITRUS FRUIT INDUSTRY IN LOUISIANA
Sanford H. Bederman 1

GEOGRAPHY IN THE REALM OF **WISSENSCHAFT**
Hildegard B. Johnson 9

REVIEW OF THE 1960 ANNUAL MEETING
John R. Dunkle 21

POPULATION CHANGES IN MEMPHIS, 1950-1958
Paul H. Sisco 24

IDLE RURAL LAND PHENOMENA IN MADISON COUNTY, GEORGIA
Merle C. Prunty 39

NECROLOGY 50

THE SOUTHEASTERN GEOGRAPHER is published annually at the McGregor Co., Athens, Georgia. The subscription rate is $2.00. Members of the Southeast Division of the Association of American Geographers will receive THE SOUTHEAST GEOGRAPHER as part of their annual dues.

Mail manuscripts to: James A. Shear, Department of Geography, University of Georgia, Athens, Georgia.

THE CITRUS FRUIT INDUSTRY IN LOUISIANA[1]

SANFORD H. BEDERMAN
Georgia State College

Citrus fruit has been grown in Louisiana for almost 250 years, and has been noteworthy commercially in the state since the 1830's, but the amount grown is extremely small compared to the volume that is produced in California and Florida. Louisiana is seldom mentioned in any literature concerning citrus since virtually no experimental work or scientific research on citrus has been conducted in this area. Also, it is amazing that many Louisianians are unaware that citrus is grown within the state.

An appraisal of citrus production and its potentialities in Louisiana may be in order as the nation's population and per capita citrus consumption continues to mount. Accentuating this situation has been the reduction of citrus acreage in several other producing regions. California, for example, has lost a significant portion of her citrus acreage since 1945.[2]

An understanding of the physical capabilities of the State of Louisiana, along with the historical background of the citrus industry and a cognizance of the method of production and marketing of the fruit are necessary to an appreciation of the state's prospect as a citrus producer.

Historical Setting

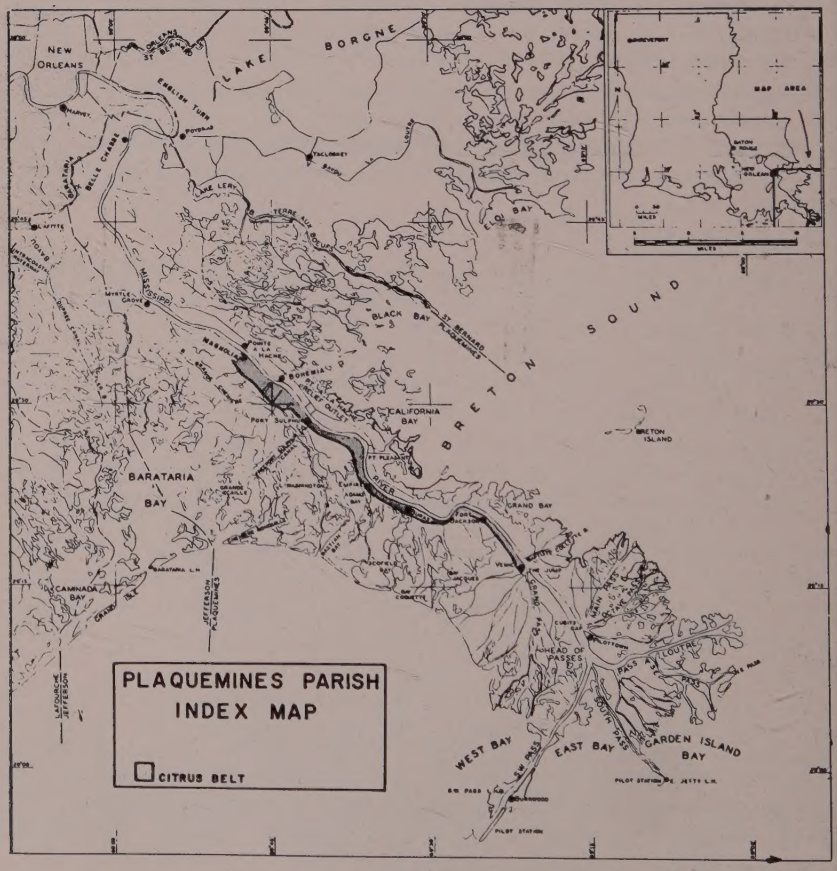
Citrus was first planted in Southern Louisiana in 1712 by Father La Ru, a Jesuit missionary. The specific site was at Fort Mississippi, about 35 miles south of New Orleans.[3] A decade and a half later, the Jesuit missionaries brought orange seeds from the West Indies and planted them in the vicinity of New Orleans. Beginning at this time and continuing until the 1870's the trees were planted from seed.

In 1712, the first of the John Law colonists settled in the parish and began to cultivate small farms. Around 1800, the colonists began to raise small quantities of oranges in orchards scattered throughout the parish, mainly on the east bank of the Mississippi River in the neighborhood of Point a la Hache, the parish seat. Shortly after 1800, they began to plant large orchards, the first ones being the Woodland, Magnolia, and Orange Farm Plantations. Later, large citrus groves were extended southeastward along the west bank of the river to Venice, which is about 75 miles below New Orleans.

The growers tended their trees industriously and with enterprise and were continuously searching for new varieties. The mandarin (tangerines and Satsumas fall in to this category) was introduced in the United States from Japan by the growers some time in the decade 1840-1850. The first mandarin trees planted in America were at the Italian consulate in Algiers, Louisiana. Shortly afterwards, mandarin trees were planted in Florida.

In 1870, a significant improvement in the industry was made by George Schoenberger and W. S. Reddick, two of the largest orange growers of the period. They introduced budding as a more rapid method of propogating the fruit. They planted seeds of both the sour orange and *Citrus trifoliata,* using the resultant growth for root-stocks. Budding on this stock demonstrated that trees could be brought to full fruition within three years and also produce a vastly superior grade of fruit compared to that grown from seedlings, which took approximately ten years for the trees to bear fruit.[4]

Oranges were beginning to be produced in marketable quantities as early as 1838, and the growers received almost 15 dollars per thousand oranges. The fruit was shipped loose to market, mainly in sailing boats.



Another significant step toward the improvement of the industry was made possible by the Weingerger, Laux, and Meyer Co., when they first sized the fruit, packed them in boxes, and shipped them to commission merchants. At the same time, the sail boat, as a means of transportation, was discarded and the steamboat took its place. After that, other methods of transportation followed, such as the motor boat and the railroad. Today, however, with the advantage of improved highways, almost all citrus fruit is sent to market by trucks.

The citrus industry received another important stimulus in 1916, when the growers combined to build a drainage system for the Buras area. The pumps reclaimed the land that had once grown rice but had proved uneconomical to cultivate after the slaves were freed.[5] Today, 80 per cent of the citrus fruit grown in Plaquemines Parish would not be possible if it were not for artificial drainage.

Almost all the history of citrus in Louisiana centers around Plaquemines Parish and its environs. There were "boom" periods in other areas of Louisiana, but they were short-lived, primarily due to the susceptibility of those areas to natural hazards.[6] The citrus industries of Beauregard, St. Tammany, and Cameron parishes suffered extinction due either to severe freezes, destructive diseases, or to inundation caused by tropical storms and hurricanes. Today, southern Plaquemines Parish is the center of the Louisiana citrus industry. It, too, has suffered periodically from the natural hazards, but they have struck infrequently enough to allow the industry to remain profitably extant.

A cultural situation anomalous even in South Louisiana is found in the Plaquemines Parish citrus area. One sees names such as Evasovich, Schoenberger, and Gasquet appearing on mail boxes and signs. These names represent a few of the nationalities present in the parish. In the earliest years of settlement, the French dominated the scene. They were the first cultivators of citrus in the state; they devised the present-day land system; they were responsible for establishing a distinct type of architecture; and also, they introduced a host of names that are still found in the state and in the area.

Among the most significant of the newer European immigrants are the Slavonians, often called "Dalmatians," who were quite different from the bulk of Yugoslavian immigrants that settled in northeastern United States. They had a history of being sea-faring people and, as a result, had a good knowledge of the world. When they emigrated from Yugoslavia, they knew exactly where they wanted to go, two such groups settling in the United States. One group went to California, where they acquired a reputation for being excellent deep-sea fishermen, whereas the other settled south of New Orleans in Plaquemines Parish, coming as early as 1864.[7]

A large number of Slavonians became prosperous oyster cultivators, having their camps situated in isolated spots near the Gulf of Mexico. Many of the Slavonians no doubt had an excellent knowledge of growing orchard and vineyard fruits and also had techniques of

making wine. It was not difficult for them to continue growing the citrus that had been cultivated in the parish for almost 200 years by the French. There is no evidence that the Yugoslavs brought in any new techniques for growing citrus. In fact, the growing of citrus fruit is still carried on in the French tradition. The making of commercial wine seems to be the only Yugoslav contribution to the citrus complex in Plaquemines Parish.

Today, the names of some of the largest producers reflect their Yugoslavian ancestry, of which Cognevich, Evasovich, Pavlovich, Pobrica, Lulich, and Pivach are a few examples. The Yugoslavs have not been culturally absorbed. Although living in a distinctly Louisiana French environment, they have maintained many of their own cultural patterns. However, the growing of citrus fruit is one trait borrowed in its entirety from the methods long established in the area.

On the whole, it can be said that the procedures involved in cultivating, harvesting, and marketing citrus in Louisiana do not reflect the unusual nature of the people, but are actually modified derivations of practices used elsewhere in the United States. This means that the French who grew citrus did not make any new contributions but in turn borrowed the techniques found in the larger citrus areas of the United States.

Present Production in Louisiana Citrus Belt

Cultivation. In Louisiana, trees are usually planted 100 to an acre. In order to secure better drainage, they are planted on ridges made by plowing the soil to the middle. Between 4,000 and 5,000 acres of citrus are planted in about a 15 square mile area, 30 miles in length by one-half mile in width.

Almost all the growers follow the same work cycle throughout the year. They fertilize in March and May; they spray in March, in April or May, and also in June. In July and August, the trees are dusted with a sulphur compound.

The summer months are spent primarily in trimming trees, cleaning out drainage ditches, and clearing and burning underbrush. New plantings are started in January and February. In case of a freeze, the work cycle is interrupted until late spring to see the extent of the damage, then the trees are pruned with the hope they will produce fruit again.

Frequent tillage is required to keep the fast and lush growing vegetation under control. When the vegetation is not cut, as has been the case in many Louisiana orchards, the fields very shortly take on an appearance of abandonment, when in reality, they are still producing fruit.

In 1945, a survey was made of 21 farms in Plequemines Parish.[8] These farms ranged in the size from 20 to 200 acres and averaged 33.9 acres in size with 6.5 acres in citrus. The larger farms (90-200 acres) averaged 128.4 acres in total area and 45.7 acres in orchard. Approximately one-third of the total land in the surveyed farms was

n citrus groves. A large segment of the farms were composed of marsh, unsuitable for agriculture.

Louisiana Navels and Sweets share the distinction of being the most widely grown varieties, each making-up about 25 per cent of the total. Satsumas are next in importance with 20 per cent, followed by Valencias with 15 per cent. The remaining 15 per cent consists of tangerines, mandarins, kumquats, and hybrid varieties.[9]

The actual physical make-up of a Louisiana orange grove is much different from what one would find in Florida and California. On an individual grove in Louisiana, often as many as six different varieties are grown. In California and Florida, one could travel for miles and see nothing but navel or Valencia trees. There the growers have geared their whole operation toward growing just one or two varieties. The fertilizer, sprays, and packing equipment are those used only for the varieties grown, thus making their work much less complex.

Louisian growers cannot cope with cold weather as easily as the California and Florida growers. The Florida citrus area, situated in the hillock country in the north-central portion of the state, has the advantage of an excellent natural means of air drainage, thus protecting the fruit grown on the high ground. In California, radiation frosts are the primary threat, and well-placed orchard heaters provide protection. In Louisiana, the situation is altogether different. Local relief in the citrus area is only about fifteen feet, therefore air drainage has little opportunity to be advantageous. Radiation frosts are not the main problem here. Cold waves, brought by an influx of polar air with accompanying high winds do most of the damage to Louisiana citrus. Orchard heaters are useless under these conditions. The main method by which Louisiana growers ensure successful tree growth is to plant many varieties in the same orchard. Since all the varieties are not going to be in bloom or have mature fruit on the trees at the same time, a freeze likely would not damage the dormant trees, leaving them still to bear fruit during the year.

Harvesting and Packing. In 1960, there were 12 packing houses in the citrus area. Before the freeze of 1951, there were 21 packing houses operating. In such a small area, it is not difficult for the growers to get their fruit from the groves to the packing houses. Most fruit is hauled to the packing house in tractor-drawn wagons; but if the packing house is too far away from the grove, the fruit is transported by truck.

All oranges that reach the packing house are mature and are ready for market; but are deficient, as far as the growers are concerned, because the skin does not have the proper orange color. In order to give the fruit a color that is more acceptable to the consumer, the oranges are sprayed with ethelene gas in a closed room for a period of 48 to 60 hours. This process turns the skins to an orange color without affecting the quality of the fruit.

Many growers do not own a packing house. In this case, they take

their fruit to a packing house and pay the standard fee of 72 cents per bushel for the processing. For this sum, the oranges are packed, labeled, and inspected, and if the fruit needs the ethelene treatment, eight cents more is charged per bushel.

Marketing. The total yearly output of Louisiana oranges is minute compared to that of California and Florida. Louisiana can claim less than one per cent of the total national production. In 1937, California produced almost 46 million boxes of citrus, compared to almost 27 million boxes in Florida, and a half-million in Texas, and 238.000 boxes in Louisiana. Since that time, Louisiana has reached a maximum output of 410,000 boxes in 1946 and then, because of the 1951 freeze, dropped to 50,900 boxes which matched the 1921 output.[10] The production figures for 1959 showed Louisiana's output to be 220,000 boxes, largest since the 1951 freeze. During the same year California produced 39,900,000 boxes and Florida 86,000,000.[11]

With few exceptions almost all the oranges grown in Louisiana are marketed in New Orleans. According to the best available estimates, between 75 and 80 per cent is consumed there. The remainder of the fruit is accounted for in the form of Christmas packages distributed to all parts of the United States; is sold at small road-side stands, or is utilized in the making of orange wine.

Orange Wine Industry. The most important by-product of Louisiana citrus is orange wine. At the present time, there are two large wineries, both in Triumph, a town lying a few miles east of Buras. One winery is owned by George Pivach and the other by the Lulich Brothers.

According to Anthony Lulich, the Valencia and Louisiana Sweet are the varieties used for wine. Actually, the tangerine and Louisiana Navel make the best wine, but are too expensive to use.

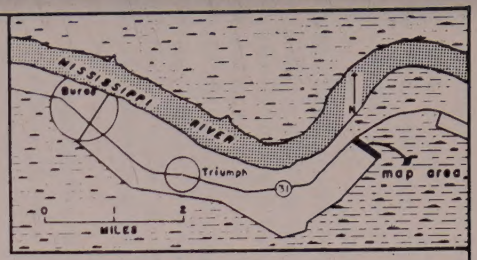
Until November 21, 1956, the juice at Lulich's winery was squeezed from the orange by hand. At that time, a new orange-crushing machine was installed. In one-half hour the machine squeezed enough oranges to make 200 gallons of pure juice. Formerly, it took two men all day to make enough juice to equal the half-hour output of the machine.

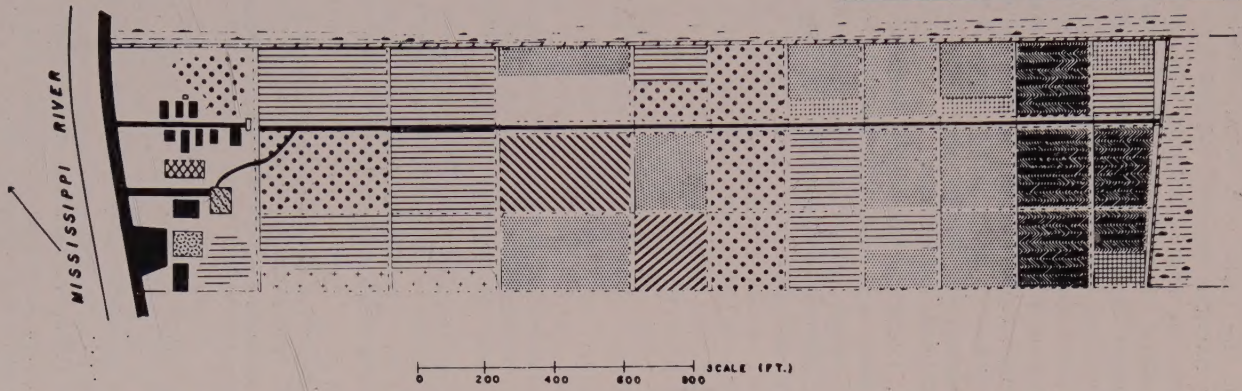
Once the pure juice is obtained it is started through a process that within a year will reach retail counters ready for sale as orange wine. The juice is put into a cistern where sugar and water are added. It is then pumped into 50-gallon wooden barrels where it sits through the fermentation period, lasting about 12 months. After the liquid reaches a potency of 18 per cent, it is pumped into another cistern where it is filtered through a special paper that "polishes" or strains the wine. From this point, it is bottled, capped, and labeled, and is then ready for sale. The Lulich Brothers winery has a handling capacity of 20,000 gallons.

The Prospect

The citrus industry in Plaquemines Parish is about the same now as it has been for the past 20 years, but it is on the decline. Most of the recent plantings have been small family-type orchards of ten acres or less, and it is not likely that large orchards will flourish again.

LULICH BROS. CITRUS FARM
TRIUMPH, LOUISIANA
1957





There are few indications that the Louisiana citrus industry will expand; one mjaor feature being expense. Due to cost of land and labor, many of the farms are being developed into lots and sold. Because of the climatic insecurity of the area, there are few growers who will attempt the risk of making new plantings. One bad freeze or hurricane could destroy their investment. In addition to taking the initial risk, the grower could not expect any returns from a newly set grove for at least four years. Moreover, these uncertain conditions have encouraged many of the present growers to seek security as employees of the petroleum and sulphur companies which lately have become the most important economic entities in the parish. By going to work in industry they have neglected their trees, and as a result, the trees became "fair game" for inscets and diseases. This infection in turn hindered the conscientious grower.

In summary, Louisiana has never been an important producer of citrus nor is there any likelihood that it will be. In light of the need for more citrus growth, Louisiana, with its climatically and topographically limited area, does not appear to be an answer to the pressing problem at hand.

---

[1]The writer is indebted to Professor Fred B. Kniffen, Department of Geography and Anthropology, Louisiana State University, for helpful suggestions on conducting field studies in Plaquemines Parish, Louisiana.

[2]Griffin, P. F. and Chatham, R. L., "Population: A Challenge to California's Changing Citrus Industry," *Economic Geography*, Vol. 34, July, 1958, 272.

[3]Schoenberger, B., "The Orange Industry of Plaquemines Parish," *Program*: Fourth Annual Orange Festival, December 4, 1949, Buras, Louisiana, 7.

[4]Schoenberger, B., *op. cit.*, 9.

[5]Ellison, Virginia, "State Orange Industry Aims for City Trade", New Orleans *Times-Picayune*, November 28, 1948, p. 2, Sec. 2.

[6]For a more complete discussion of natural hazards, see Bederman, Sanford H., "Louisiana Citrus and Natural Hazards", *Louisiana Rural Economist*, Vol. 19, May, 1957, 2-5.

[7]Parenton, Vernon, Professor of Sociology, L. S. U., *Personal Communication*, January 10, 1957, Baton Rouge, Louisiana.

[8]Montgomery, J. P. and Fenske, L. J., "Orange Production in Louisiana", *Louisiana Rural Economist*, Vol. 7, November, 1945, 4-5.

[9]McEachern, Murphy, "Louisiana Oranges," *Program*: *Plaquemines Parish Fair and Orange Festival*, Buras, Louisiana, December 8-9, 1956, 47.

[10]Montgomery, J.P., *Agricultural Statistics for Louisiana, 1909-53*, Louisiana Bulletin No. 490, L.S.U., May 1954, 58.

[11]Spurlock, Donald H., Horticulture Specialist, Louisiana Extension Service, *Personal Communication*, February 19, 1960, Baton Rouge, La.

GEOGRAPHY IN THE REALM OF *WISSENSCHAFT*

HILDEGARD BINDER JOHNSON

Macalester College

This outline of a reasoned methodology is no attempt to restate in part the history of geographic thought for which admirable literature is available in English, German, and French.[1] Nor is it a compilation of several, let alone all, important terms and concepts, that enter methodological discussions of geography. A few selected propositions and conclusions are deemed sufficient for the argument and explanation of the presentation on the chart. The claim is made that geographic research which aspires to validity as well as geographic research which confesses to values is supported by the logic of research procedure.

Natural and Social Sciences as Wissenschaft

Techniques of geographic investigations, such as observing and charting surface features, measuring phenomena, designing models, collecting data and their further processing, interviewing, analysing and integrating documentary information, have little bearing on the logical principles that are fundamental in research. Creative thought is neither under discussion. We are concerned with research that makes a contribution to knowledge of empirical reality. The synonym for knowledge in German is *Wissen*, when systematized, *Wissenschaft;* its Latin synonym is *scientia*. This meant originally the sum of knowledge. It is possible that the unity of the concept of knowledge broke up at the end of the Hellenistic period. Perhaps it was merely replaced in western thought by the universality of medievalism. The latter broke up during the Renaissance under the impact of geographic discoveries, the development of experimentation, the re-discovery of classic and non-western knowledge, to name a few of the contributing factors. With free investigations came specialization and the desire to classify, to generalize through qualification and to develop predictive values.[2]

Through the years mathematization became increasingly the mark of generalizing research for a good reason: In mathematics the subjective character of time, Einstein's "I-time," its heterogeneity as process or continuum is replaced by time as a constant, as reversible, consisting of equal parts, homogeneous. Increasingly, mathematics and experimental sciences meant advancement of knowledge while historical writing—in the widest logical sense of the term—came to be considered as an enrichment through experiences. The scientist and the man of letters appeared to part ways and the ensuing polarism has served us ill, particularly in a society which profited extraordinarily from the applied sciences and technology. "The dissociation of science from the rest of our culture has deep-seated causes and disturbing implications."[3]

The firmly entrenched division in academic life between natural and social sciences is no accident; it can be understood historically and is justified administratively. It is likely less pervasive in scholarly pursuits and often overcome by collegeiate cooperation. The popular

adulation of matters and men that are, or only go by the term, scientific and scientists, is more dangerous. Thus, in the popular image, Thomas Edison is a scientist and not an inventor. On the other hand, great benefits for mankind, for example, immunization through vaccinations and safety measures made possible through radio, are considered an exclusive contribution by science without credit given to the work entailed in the "social responses" which were needed to make discoveries by science effective in society.[4]

We must now live with a generally accepted narrow conceptualism of science and with such misunderstanding and discussion of what constitutes 'science.' In the logic as it applies here all endeavours to gain knowledge by observing empirical reality are the pursuit of science. Those who are concerned with science, *scientia, Wissenschaft*, natural and social sciences, history and geography, they all move in the vast realm where the search for truth about empirical reality goes on.

Empirical Reality

Whether reality is conceived as a finite or infinite universe, whether we accept it as being or assume it to be—"it is nonsense to ask whether it be true or false."[5] Empirical reality is unconditionally given and changing. This is the fundamental aspect of reality to which historians, biologists, astronomers, economists, sociologists, and others bring their curiosity. "The things with which we (the geographers) place, for good reasons, not anywhere but somewhere, that is in actual situations and places."[6]

Empirical reality is confusion. It cannot be comprehended as such or in its total appearance. The first step of learning about reality means to distinguish, to divide, to order. The subjectivity of the investigator, who himself is part of the time process and in individual locations on earth, is part of the first step toward orientation. The absence of sharp boundaries among the infinite number of phenomena, appearing on earth and in process, makes division as the geographer needs it particularly difficult.

Orientation in the confused heterogeneous continuum, which is the earth and man in interaction through irreversible time, is possible in three ways: 1. Reasoned division of the whole into parts, which has generated a specific geographic contribution to knowledge, namely regionalism, the intensive and/or extensive investigation of these unique parts in their internal and external relationships. 2. Search, arrangement and classification of reoccurring phenomena over a small, a large, the whole area of the earth and establishment of the rules by which they occur and behave in association. 3. The third way is the frequently taken practical procedure of combining both, the first and the second.

Regionalism in geography corresponds to periodization in history. Logically, there is no limit to the number of parts into which the stream of time can be separated, nor to the number of criteria by which the earth can be stratified into regions. There is not likely to be an

end to the debates among historians about periods, which to choose and when to begin and to end them. The vast literature about the beginning of modern history and the end of the middle ages is a good example. Nor can there be a "completed" index of regions. Regions and periods, both, overlap. Still, regions are individualities and unique, no matter how similar they appear, because they are empirical and unique in place and tied to the time process. After they are defined by some criteria, they can be investigated item by item, as subordinated parts, by internal and external relationships of the whole and of each part, but the whole is still something *different* from the sum and integration of its individually disintegrated parts.[7] Their size is immaterial, they can extend over a continent or comprise one farmstead. Hans Carol's "geomer," that is, any part of the earth's surface with consideration of atmosphere and subsurface projected from the selected area, is logically also merely a part of the whole. The fact that there can be no end to regional studies, logically speaking, may be discouraging but it is in accordance with the pursuit of knowledge by men in general. The limitations of that knowledge which is derived from studies of geographical individualities are: a) the areally defined unit cannot be totally rendered because it is intensively infinite, b) since time as process is not eliminated the investigation is historical before it is even finished, c) the criteria are strongly tied to the subjectivity of the investigator and in his selection of the essential aspects of the individual 'region' values are likely to enter.

The other way to establish an order for the chaotic empirical reality is to search for re-occurring phenomena, to control their infinite variability of appearance by identifying the factors which produce the variability and to control these in hypothetical propositions. The aim is to arrive at workable hypotheses on the basis of comparisons of a sufficient number of samples so as to warrant the probability of truth for the population. In reality, observable phenomena are multivariate and the numerous factors at work may operate in many different directions.[8] Even the most complex formula cannot carry all incidental features, many of which may appear only once in space or time, through an investigation. The individualizing traits can be covered by comprehensive symbols which means jeopardization of identifiability. Under all circumstances, the generalizing procedure which must go with quantification rests on the controls and order of empirical reality which eliminate the incidental, the complex "unique case."[9] This is precisely that which charactedizes the qualifying procedure in thought and investigation.

But actual work rarely proceeds in one direction only or entirely. The regional geographer as a representative of the qualifying procedure is also using quantification. A number of phenomena, be they added as homogeneous equals or as heterogeneous appearances in reality subject to the same force or forces, will make up the region of a delta plain, a specific mountain range, a watershed, a metropolitan area. Merely the need to use generic terms and simple classifying words like

plain, valley, erosion, urbanization implies generalization. The topical or systematic geographer as a representative of quantifying procedure individualizes by dealing with phenomena that re-occur over a specified area only or in identified connections, that is in individual groups of associations. Studies of transportation systems in the United States, of the location of caravan towns on desert fringes over the world are examples of individualized frames of reference. 'Space adjustment techniques' can move 'fundamental research' very far in the direction of quantification but as long as the data used have any meaning for phenomena on the earth's surface elements of time/space-individuality persist and the certainty of pure mathematics is not reached.

Significance

The conclusions from the study of a 'region' or of one comprehensive aspect of a part of the earth's surface refer to an individuality. Ensuing comparisons with other parts of empirical reality underline that which is different rather than similar. Results of such investigations have general significance. This expression is used for the sake of simplicity. We shall use 'significance in general' to apply to generalizing and on the other hand, 'general significance' to apply to individualizing methods. It is debatable if the terms could not be used vice versa, but this is unimportant as long as consistency is maintained. General significance, by standards of judgment, is likely readily conceded to a biography of Napoleon, a history of democratic thought in western society, a monograph about the port of Singapore, the geography of China, an investigation of the geography of the Tennessee Valley Authority. But general significance also adheres by logical standards to a small Indian skirmish or the headwater region of Little Creek. The significance adjudged by an investigator to that which is not to be divided, is individual, and an individuality can be accepted or rejected—it cannot be proved or disproved by testing the hypothesis. Admission of the possibility of disproval would imply the negation of the assumptions we made: Undivided reality exists and is amenable to acquaintance with empirical reality through organizing its incomprehensible coherence into unique parts.

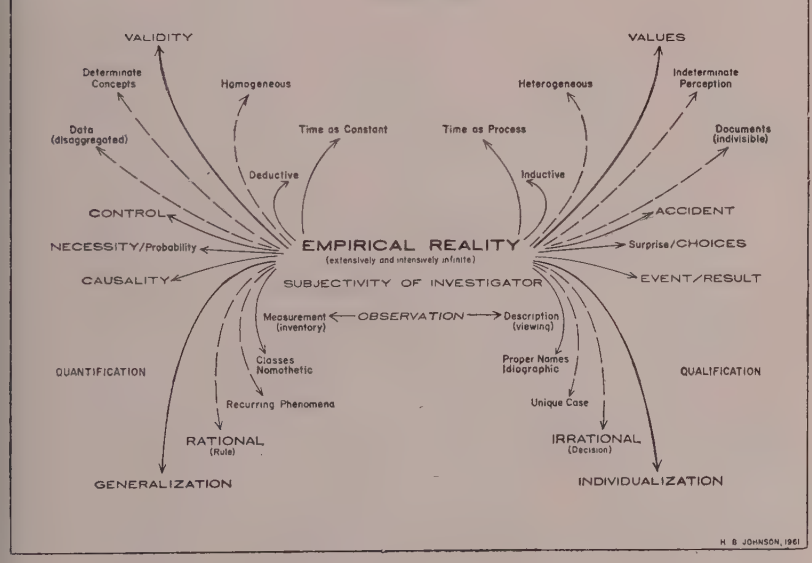
Significance in general adheres to finding from observations which eliminate the unique. An investigation of radium as an element deals with that which has significance in general. The exposition of details connected with the particular particle of radium isolated by Pierre and Maria Slodovska Curie in 1898 in Paris has general significance. Significance in general can be established by observing phenomena in actual reoccurrence or by observing conditions under which one phenomena occurs when we know or assume that these conditions are repeatable. We may actually "learn" from a particular storm or the finding of one plant during a mountain ascent. Particular place, time and severity of the storm and the losses incurred are incidental. The pressure systems that brought it about, the general path it took, are significant in general. The actual appearance of the plant, perfect, mutilated, young, mature, its locations right or left from a road on a certain date are interesting and perhaps generally significant. Its

ocation in a certain altitude, on a slope of northern or southern exposure, on a certain type of soil, in association with other plants likely has significance in general, — all these environmental conditions are functional and repeatable. Predictive values are then possible because former observations have proven these conditions to be effective as factors.

Charts and drawings which show what is generally characteristic for isobar arrangements in a severe storm, of leaves and seed of a certain plant are part of the generalizing investigation. Photographs of a tornado, of a plant, a house, always unique as an individual case in location and at a certain time in the general process of time, are logically part of the individualizing inquiry. No leaf looks as it is drawn in a book. The photograph of a leaf can show what is typical either because an accompanying text tells the viewer or because the viewer is trained to recognize in the photograph of the leaf what the characteristics are through whose reoccurrence the individual sample becomes typical and a representative of a species. Both, diagrams and photographs are found together in many books, including geography books, and are literally, an illustration of the fact that few geographers proceed in one direction only.

Simplification and Classification

The description of given reality is a simplification that aims to render that which is deemed significant and unique in itself or typical in a unique and an individual case. By classification, the infinite appearance of selected phenomena are simplified as a group, a species, a collective.



In neither case is empirical reality recreated, it is rendered. In the first case, the approach is by indeterminate view, in the second, by determinate concept or example. In the third case qualitative distinctions are maintained, in the second, qualities are disconnected, disaggregated, and inherently thus made quantifiable. Simplification, of reality by selective, qualifying exposition is additive and has no inherent logical sequence. The frequent organization in works that fall under *Laenderkunde,* for instance, beginning with surface features or climate and progressing with soils, vegetation to settlements, transportation and trade, is a procedure based on precedent, tradition, successful experience. There is no logical reason why it must be arranged. This procedure implies decisions or choices at every step. Simplification by grouping and quantifying implies that criteria be formulated at the beginning, that controls are introduced before the factors are manipulated and that standards are maintained. Decisions are made only when and where the criteria under which the geographic phenomena are investigated call for it, and not because the investigator feels that another or new experience might be included. Systematic research which might well begin with classification requires discipline and enforces the stipulated rules. This inherent restraint—quite apart from the specialization that results from the many rules that can be set—commands respect. No wonder that the soaring heights to which systematic scientific works have risen caused many a scholar who is concerned with 'description' of individual detail to wonder if it was worth while to add another wing or decoration to the sprawling building of descriptive sciences.

Accident or Causality

Actually, we move freely in a wide field between idiographic and nomothetic,[10] individualizing and generalizing components and between induction and deduction. In the same investigation we classify individual places, apply generic terms to a set of buildings, explain the results of a climatic event by general physical laws, look in different environments for the effect from settlement by homogeneous groups and study different people and their varied role in the same environment. Still, the conclusions drawn from these investigations can be identified along a scale that runs from uncertainty to certainty and that registers the degree to which a predictive value is valid. We want generalizations to have the highest possible validity. We also incline to a metaphysical equalization of truth and validity, and find that men have accomplished very much by proceeding on the basis of generalizations that are valid. But all validity depends on stated conditions and the future of all the conditions of individualities is not stated. No matter how high the degree of probability, the causality to which it applies remains qualified. All process in empirical reality has one direction and contains the elements of the unforeseen. That which we know or can know with total certainty has to be in the past.[11] The future always has an element of uncertainty.

In the field of history, we shall call this uncertainty accident. In

geography, its counterpart is the irregularity of distributions in reality. Since accidents happened in the past and will happen in the future, validity of generalizations is strongly limited when we use them predictively. History does not repeat itself. Process observed in one region or an arbitrarily fixed, static situation has limited validity in another.

Many airplanes have engine failures, but when such failure occurs in an American plane over Russia shortly before an international conference in 1960, the accident becomes the cause of far reaching results. Men have delineated many areas of land for fields since agriculture began. The Ordinance of May 20, 1785 which established the rectangular survey for the larger part of the United States produced results which were very extensive and varied because a rational device was applied to the natural irregularity of distribution of surface features. The earthquake in Chile of 1960 which produced sudden changes in the country's geography may be explainable by seismologists after it happened. But there is no general law of causality into which we can fit earthquakes, the inadequacy of the rules for land divisions under the survey in the arid west, or the results of engine failure over hostile territory. We know no causality that explains why the conditions which gave rise to the Grand Canyon, Niagara Falls, the Khyber Pass, the Hawaiian Islands, the little outlet of Lake Itasca, etc., should work in their peculiar association at one location through the time process and not at another on earth. Immanuel Kant's first sentence in the first edition of the *Critique of Pure Reason* (1781) still stands: "Human reason, in one sphere of its cognition, is called upon to consider questions, which it cannot decline, as they are presented by its own nature, but which it cannot answer, as they transcend every faculty of mind."

That which we called accident and irregular distribution through time and in space might be explained by divine law, by law of nature or it might be considered to be under the prerogative of man at the various 'decision-making levels.' We can only anitcipate, by relating past and future, what the latter is going to be like for generalized groups like five billion people on earth. We cannot construct a system of a possible future in which we can identify actual living conditions of Americans or Chinese, let alone, living conditions for one individual child, in a place in either country around 2000.

Thus we take precautions against storms that may never occur because we know the seasons of past occurrences and the usual paths of damaging storms. We plan highways and production centers and shopping districts with refined techniques for probably optimum locations but cannot be certain that the seemingly irrational decision by a policy making body will not shift the project into a merely good or even bad location. Hybrid seeds and other agricultural benefits, developed in the United States, may or may not do well in other countries, since success depends also on the people in the other country and on the individual who distributes the seeds. That individual does well to have "unspecialized curiosity about the world he inhabits," a

curiosity that is "in some respects essentially saner than that of those narrow specialists who have denied and still deny the claims of geography."[12] It might be added: and history.

Documentary Sources and Data

History and geography differ in one respect. History relies largely on sources, part of man-made empirical reality. Empirical reality is given more directly and more disordered in the geographic environment. The written, printed, engraved sources are communications from which the historians reconstruct the past. Historical science uses much of direct empirical reality, indeed, to help in the reconstruction. A history of Florence would hardly be written by a historian who never saw the city but it could not be written by him if he had no printed or written source material; the archeologist would have to take over. Often, the historian wished he had more sources or better access to sources which he knows exist. The geographer has the actual environment for his abundant, direct, and very "complex" source of information.

Both, history and geography use documents and data. Documents are fixed reflections of a particular situation or event. They can contain information which, when grouped with information from other documents, is quantifiable. Documents need not be individual sheets, parchments, tablets; a statement of connection, a sentence, one word can be a document. Lines 1, 2, 3, 4, in Table I are excerpts from a federal manuscript schedule. They are documents in the same way in which a letter of 1869 from a pioneer farmer in the Middle West is a document. The four farmers together in line 5 are still an individual group with farmsteads comprising an individual contiguous area of 1,125 acres.[13] The sums derived from numbers in the vertical columns are valid for disaggregated spatial arrangements. The peculiar associations revealed in lines 1, 2, 3, 4, are lost and another, more general association is established in line 5. But the lost information of the first four lines is irretrievable from the general association. When originally given associations—be they contained in individual documents or gained by direct observation of reality—have been disaggregated they cannot be processed back into existence.

This is a simple illustration of the 'limits of the formation of concepts in the natural sciences,' the limitations of all generalizing procedures.[14] It applies to geography because geography deals with unique appearances in an infinite number of locations in a finite continuum, the earth—no matter how geography is defined. It applies all the more because geography must also deal with the effects from the unpredictable human decisions. So we are concerned with individual spatial arrangements of associations—every time comparable to material the historian finds in a document. But there is one reservation: The spatial arrangements are changing, are process; the document is process fixed at a point.

TABLE I: EXCERPT FROM FEDERAL AGRICULTURAL CENSUS SCHEDULE—1860

Winona County, Minnesota

Farmer	Acres of land		Cash Value of Farms	Value of farm implements	Live Stock						
	Improved	Unimproved			Horses	Milch Cows	Working Oxen	Other Cattle	Sheep	Swine	Value of Livestock
A	20	380	1200	100	2	4	2	7	—	1	330
B	15	145	1400	50	3	12	2	11	—	6	760
C	8	492	2500	50	1	2	—	2	—	1	167
D	15	50	460	75	—	1	2	1	—	2	120
	58	1067	5560	275	6	19	6	21	—	10	1377

The spatial arrangements can also be dissected, disaggregated and split into disassociated elements which does not mean that these elements could not be split further and united into new arrangements with complex characteristics. How much complexity can be preserved as recognizable in "element complexes?"[15] "Spatial mechanism" is a somewhat more dynamic term indicative of the fact that forces are at work.[16] When applied to land usage such a formula might have to manipulate position of the parts of the mechanism with respect to surface features such as creeks, hills, rocks, roads, lakes; to cardinal directions in the internal arrangements of parts; to shapes and sizes of fields and other types of land usage; to the situation of human artifacts in the mechanism. These are likely not all the qualifications of the various parts which need definition in a complete 'element complex' or 'spatial mechanism.'

Whatever the generalizing steps, the gained concepts can become valid for larger areas only by sifting out the actual appearances in reality. The more widely applicable the system is to become for larger areas and finally for the world the less the formula can contain about reality encountered in the individual *situs*. This logic has general validity. It is contained in Heisenberg's famous statement of the *Principle of Uncertainty* of 1927 when he found that the more we can know about the position of moving electrons the less we can know about their velocity.

Value and Validity

If we cannot resolve this dilemma we are meeting its challenge. We shall move farther and farther in an ever widening field that is open in all directions and in which all directions are followed to gain cognition of truth, as it applies to knowledge about empirical reality. Knowledge that is valid and based on generalizations and knowledge that has value and aspires to individual realization.

However, our society recognizes validity, which is one way of getting at truth, as a value. Some members of our society consider the search for valid generalizations as the only way of finding truth; others, for instance, creative artists, may deny that this is any way at all to find truth. But on the whole, technologically advanced societies have derived so many benefits through the applied sciences from valid generalizations that the latter are considered valuable. Other values, for instance, life, physical well-being as such (not how it should be achieved) and literacy, are values upon which agreement is reached easily. To save time on safe roads in overcoming distances is considered valuable in western society. When safe roads are to be built straight as the shortest connection between two points, another value, that of preserving good land, may be in conflict with the value of saving time.[17] Accessibility can be considered to have value. Still, a segment of our society is making a stand for a roadless wilderness area along the Minnesota-Ontario border. Some consider it valuable to search for knowledge about jungle-hidden remnants of civilization, others find that the value of proper housing overrules the value of preserving old landmarks. The planner who submits a project for the development of a residential district, after much generalizing and individualizing research, has found some experiences at other sites valid for the new site, or he postulates degrees of 'conservatism."[18] But actual plans of housing projects still reflect values, such as easy orientation, cheapness of construction, privacy through wide spacing of residences, access roads to houses that are safe for children, a centrally or peripherally located community hall. Roads, old houses, privacy, safety and so on, have value but they do not have validity.

Values are purpose related, teleological in the Hellenic sense. They are controversial, their validity cannot be proved. But values are real because men on earth have acted upon them and through man's actions values became supremely important factors in the geographic reality which we experience and about which we must know. Values can be "agreed objectives" but they must not be.[19] Values are tied to the historical process. The use of resources, in geographic distribution and through history, cannot be understood unless we recognize that men act on the basis of different objectives and values in the same environment, just as they can live by the same values in different environments, for instance, in colonies. Values imbedded in empirical reality direct our research, be it only an initial direction into that area of knowledge where validity alone prevails. Directing values might—in the opposite direction—be outright insistence on some unique value aspects of empirical reality to the deliberate exclusion of all others.

It seems that such "intuitive conviction has wilted in the face of criticism."[20] The pronouncements of value judgments are not considered proper in a reasoned methodology. Value judgments are suspect; scholars hesitate to venture so far. Alfred Hettner, took this step in the manuscript of his last book to which he dedicated most of the efforts during the last ten years of his life. Geography "shows what men received from their environment and what they made of it. It (geography) is the basis for the rightful judgment of peoples and their ways of living. We must measure men in our environment and personalities in history by the conditions under which they arose. In the same way we are permitted to judge the worth of peoples only in relationship to their land.[21]"

---

[1]Richard Hartshorne, *Perspective on the Nature of Geography*, Rand McNally & Company, Chicago, 1959, and Edward A. Ackerman, *Geography as a Fundamental Research Discipline*, Department of Geography, Research Paper, No. 53, University of Chicago, Chicago, Illinois, June 1958, may be called classic examples of independent studies of this kind. The recent review article by F. Lukermann and P. W. Porter, "Gravity and Potential Models in Economic Geography" *Annals of the Association of American Geographers*, December, 1960, pp. 493-504, is a painstaking inventory and evaluation of the studies which concern themselves with 'new methods' in geographic research. —The personal reason for this paper is the desire to harvest the fruit from years of association with a statistical and lectures, titled "Problems in Historical Research Methods" given every year from 1939-1960 by the author in the course "Methods in Research" taught for many years by the late Palmer O. Johnson, Chairman of the Department of Statistics at the University of Minnesota, See: "Some Enumerative Statistics," compiled by Palmer O. Johnson for the fiftieth Anniversary of the College of Education. University of Minnesota, 1956, published by the College of Education, March 1960, p. 12. A thorough second perusal of Heinrich Rickert's *Die Grenzen der Naturwissenschaftlichen Begriffsbildung*, 5th edition, Tübingen, 1929, with a view to transfer his general and/or historical applications to the field of geography contributed much toward clarification and the desire to juxtapose a number of terms on a single chart.

[2]The generalizing method with which even different peoples on earth and their histories were now to be studied is reflected in Giambattista Vico (1668-1744): Principi di una Scienza nuova intorno alla commune matua della nazioni. Napoli, 1725. The Scienza Nuova, translated into German, French, English is here accepted as breaking with medievalism and the Cartesian spirit. For this or other interpretations see Bernadotte Croce, Die Philosophie Giambattista Vicos. Gesammelte Philosophische Schriften, ed. Hans Feist, II. Reihe, 1. Band Tübingen, 1927. — At this time the need for enumeration made "statists" of practical politicans and statesmen; some terms in statistics, for instance, population, are a carry-over from the period when statistics dealt with peoples and states.

[3]Gerald Holton, "Modern Science and the Intellectual Tradition," *Science*, 22 April 1960, Vol. 131, Number 3408. pp. 1187-1193.

[4]For social responses see Edward A. Ackerman and George O. G. Loef, *Technology in American Water Development*. Baltimore, published for Resources of the Future by Johns Hopkins Press, 1959, first chapter.

[5]Quotation from Alfred North Whitehead, *Adventures of Ideas*. New York, 1956, p. 309.

[6]Carl O. Sauer, *Agricultural Origins and Dispersals*. The American Geographical Society, New York, 1952, p. 2.

[7]This is a deliberate modification of "the co-ordinate problem of understanding the whole as something *more* than its parts" in Ackerman, *Geography as a Fundamental Research Dispciline*, p. 27. Underlining by author.

[8]This is in keeping with reasoning by Palmer O. Johnson, for example, Palmer O. Johnson and H. B. Jackson, *Modern Statistical Methods: Descriptive and Inductive*, Rand McNally & Company, Chicago, 1959, p. 371.

[9]The problems of 'Scientific Laws and Individual Cases' treated by many geographers are particularly lucid in Richard Hartshorne's tenth chapter of *Perspective*.

[10]Nomothetic used as pertaining to universal laws, not to that which is established by convention.

[11]Carl Friedrich von Weizsaecker, *Die Geschichte der Nature*. Zwoelf Vorlesungen. 3rd edition, Göttingen, 1956, p. 13.

[12]S. W. Wooldridge and W. Gordon East, *The Spirit and Purpose of Geograph*. Hutchinson House, London, 1961, p. 15.

[13]That the area is contiguous is revealed by another document, a plat map with the names of owners.

[14]The use of the title of Rickert's work, mentioned earlier, in this connection, is in keeping with Rickert's *Erkenntnisteorie*.

[15]Used as envisioned by Richard Hartshorne, *The Nature of Geography*, 1939, p. 430, developed in *Perspective*, p. 123 ff. The definition of Merkmal*skomplex* by Otto Graf, *Von Begriff der Geographie*. Müchen und Berlin, 1925, p. 20, is ambiguous and does not fit Rickert's reasoning which is cited.

[16]The term "spatial mechanism" was brought forward for discussion by Merle Prunty in seminar, Department of Geography, University of Georgia, May, 1960.

[17]Paul B. Sears. "Our Inoexorable Problem of Space," *Science*, January 3, 1958. Vol. 127, No. 3288.

[18]John R. Borchert, "The Twin Cities Urbanized Area: Past, Present, Future," *The Geographical Review*, Vol. II, No. 1, 1961, p. 66. "One is reminded that 'laws' which might determine geographic patterns are subject to unscheduled modification or repeal. They are valid in direct proportion to the conservatism or rigidity of the society and technology in which they are applied."

[19]Reforms in general are as much a result of fighting for objectives upon which there is little agreement as of finding better ways to reach agreed objectives. Compare Ackerman, *Geography as a Fundamental Research Discipline*, *op. cit.*, footnote p. 17 where Gilbert White suggests: "Finding out what is valid may be more important than contributing to a structure which implies an agreed objective." Agreed or not agreed upon, the structure based on objectives is worth the scholar's endeavour.

[20]Whitehead, *Adventures of Ideas*, p. 183

[21]Translated from *Allgemeine Geographe de Menschen*, by Alfred Hettner, edited by H. Schmitthenner, posthumously published Stuttgart, 1947, p. 11.

REVIEW OF THE 1960 ANNUAL MEETING

The Southeastern Division of the A.A.G. held its 1960 annual meeting in Athens, Georgia, on November 21 and 22 on the occasion of the dedication of the Science Center of the University of Georgia. This group of structures houses the Department of Geography and Geology. A tour and open house displaying the new facilities was arranged for the Division members.

The business meeting, under the chairmanship of William H. Pierson, was held November 22. The Treasurer, Edward Baldwin, reported total receipts for the year of $1,241.47, less disbursements of $153.12, leaving a balance of $1,088.35. There are a total of 137 active members.

The Resolutions Committee (Robert G. Long, Chairman,, expressed the Division's gratitude to the host institution, to Jan O. M. Broek for the banquet address and to the retiring officers.

The long illness and death of L. E. Snyder, an active member and warm-hearted teacher, was memorialized by the committee. Deep regret at his loss to the profession was noted by the Division.

The Southern Studies Committee (J. Allen Tower, Chairman), reported on its symposium on Agricultural Change. Joseph Schwendeman, Editor of the Directory of College Geography, reported that 1,508 copies of the latest edition were distributed and that $200.00 was contributed to the Division from receipts.

James Shear (Yearbook Editor), reported that publication had been delayed so as to give opportunity for a larger basis for selection of papers. Members were urged to submit papers for publication.

Steering Committee activities were reported upon by John R. Dunkle, Secretary, and action was taken by the Division as follows:

1. The Treasurer will sell surplus copies of the Memorandum Folio.

2. Division members should encourage their libraries to subscribe to both Folio and Yearbook.

3. Certificates of Institutional Membership will be made available by the Treasurer for large donors.

4. Yearbooks and Folios will be sent to all members in good standing.

5. In submitting a paper to the Program Chairman, a member may request that the Yearbook Editor also consider the paper for publication.

New officers were elected as follows:

Vice-Chairman—Julian Petty

Secretary—Robert Long

After receiving invitations from the University of South Carolina and the University of Tennessee, the Division voted to accept the invitation extended by the University of South Carolina.

J. Sullivan Gibson, Chairman of a committee appointed to study the tenure of Yearbook Editor, moved that the Editor serve a term of four years from time of election—re-election not to be prohibited. The motion carried.

The Chairman introduced Jan O. M. Broek, Arch Gerlach, and Clarence Jones and expressed the pleasure of the Division that these distinguished geographers could attend the meetings.

The annual banquet was held at 7:00 p.m. Tuesday with Jan O. M. Broek addressing the membership on the topic, "The Unity of Geography." The annual award for the best student paper was presented to James Hamlett for the paper, "The Isotile: A Graphic Symbol."

PROGRAM OF PAPERS — NOVEMBER 21-22, 1960

Monday — 9:30 a.m. — David Christiansen, Presiding

"The Marketing of Florida Truck Crops"—Sidney R. Jumper

"The Florida Cross-State Canal"—Robert B. Marcus

"Reconnaissance Field Work in Conservation of Natural Resources"—Rayburn W. Johnson

"Dead Land: A Case in Clarke County, Georgia"—Howard Schretter

"Patterns of Land Development in Eastern North Carolina"—James R. Anderson

"Rural Idle Land Phenomena in Madison County, Georgia"—Merle C. Prunty, Jr.

Monday — 2:30 p.m. — Merle W. Myers, Presiding

Section A:

"The Andaman Islanders"—Mrs. Najma Rizvi

"The International Water Treaty Between India and Pakistan"—Syed Reza Ahsan

"Dividing the Water: A Problem in Political Geography"—Pradyumna P. Karan

"The Inner Asian Frontier: A Possible Zone of Conflict"—Clifton C. Carpenter

"The Amount and Variability of Tropical Rainfall in North Sumatra—William A. Withington

"The XIXthe International Geographical Congress, Stockholm, Sweden, 1960"—Geoffrey J. Martin

Monday — 2:30 p.m. — R. Paul Terrell, Presiding

Section B:

"The Isotile: A Graphic Symbol"—James Hamlett

"What is the South?"—Roland M. Harper

"The Areal Growth of Metropolitan Seattle"—Donald O. Bushman

"Creation of the Neighbood Business District"—William W. Hibbert, III

"Urbanization in Upper East Tennessee"—Terry E. Epperson

"Population Changes in Memphis, 1950-1958"—Paul H. Sisco

Monday — 8:00 p.m. — H. C. Amick, Presiding

"Alabama"—J. Allen Tower

"Georgia"—Sanford H. Bederman

"North Carolina"—J. Sullivan Gibson

Tuesday — 9:15 a.m. — James A. Shear, Presiding

"The Shortest Road to the Maranon"—E. E. Hegen

"Population of the "Quechua Region of Peru"—Donald R. Dyer

"Effects of the Conservation Reserve Program in Hart County, Georgia"—Sam B. Hilliard

"A Regional Analysis of the Puget Sound Lowland"—Joe Howell

"The Corn Belt: A Problem in Regional Delimitation—Dorothy Stafford Mason

"The People of the Cumberland Plateau: Some Characteristics Related to Their Economic Status"—George W. Webb

Tuesday — 1:30 p.m. — James E. Bagwell, Presiding

"An Examination of the Nature of Contour Lines"—James A. Barnes

"Georgraphy and the Exploration of Space"—Clark I. Cross

"The Other Street: Geography in Planning"—Leo J. Zuber

"Some Observations on the Place and Growth of Geography"—Leon McCluer

"Some Aspects of Human Geography in Latin American Literature"—Raymond E. Crist

Tuesday — 3:30 p.m.

Business Session — William H. Pierson, Presiding

Tuesday 7:00 p.m. — Annual Banquet

"The Unity of Geography"—Jan O. M. Broek, President Association of American Geographers

POPULATION CHANGES IN MEMPHIS, 1950-1958

Paul H. Sisco

Memphis State University

It is common knowledge that significant population changes have continued to take place in American cities since 1950. However, with few official figures available to show these changes, it has been difficult to analyze them accurately and systematically. The purpose of this study is to examine selected population changes that have taken place in Memphis since 1950 as they possibly typify population shifts that have occurred in other American cities. The regular decennial census of 1950 and the special census of 1958 have been the principal sources of information.

In mapping these population changes census tracts are used as the enumeration units, and most of the data are depicted on a square mile basis by census tract. Census tracts 76 and 77 (Figure 1), located in the extreme southwestern part of the city and including the President's Island industrial area, have been excluded from the study, since these tracts are large but have a combined population of only 101 persons. For purposes of comparison it has also been necessary to exclude census tracts 91 through 102, since these tracts were added after 1950, and, consequently, data for them are not available for that year.

Population Gain

The total population for the city of Memphis on January 31, 1958, was 488,550.[1] This figure represents a gain of 92,550 or an increase of 23.4 per cent over the 1950 figure. This gain is related to a number of factors common to the growth of many American cities of today. The most important of these factors seem to be: (1) the growth of the economic base activities of our cities, (2) the continued movement of people from rural to urban areas, (3) the increased birth rate in our country beginning with the 1940's, and (4) the areal growth of our cities as a result of frequent and sometimes extensive annexations, with the accompanying population increase. In connection with this last factor, it seems pertinent to mention that preliminary data for 1960 indicate that some of our cities are experiencing an actual decline in population, due to the flight of people to the suburbs on the one hand, and the difficulties encountered in the annexation of new areas on the other.

Memphis typifies the cities that have been able to expand their boundaries, resulting in large increments to their populations. For example, approximately 62 per cent of the gain in population from 1950 to 1958 came as a result of the annexation of 12 census tracts representing approximately 23 square miles or a 16 per cent increase in area. These census tracts are located on the northern and eastern periphery of the city. At this time additional large annexations are being considered.

MEMPHIS, TENN., BY CENSUS TRACTS: 1958

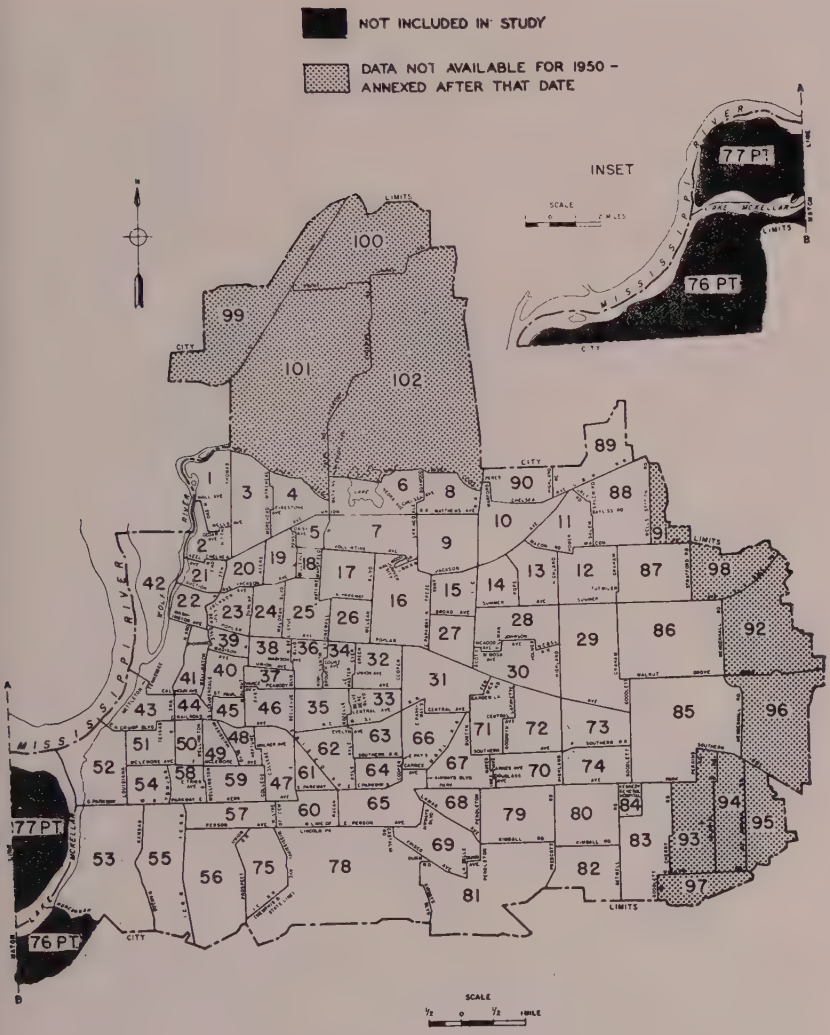


FIG. 1

It is also significant that most of the gains within the 1950 city limits were experienced in the peripheral areas where new residential subdivisions were developed (Figure 2). By contrast, the older part of the city showed gains in only a few scattered census tracts, gains

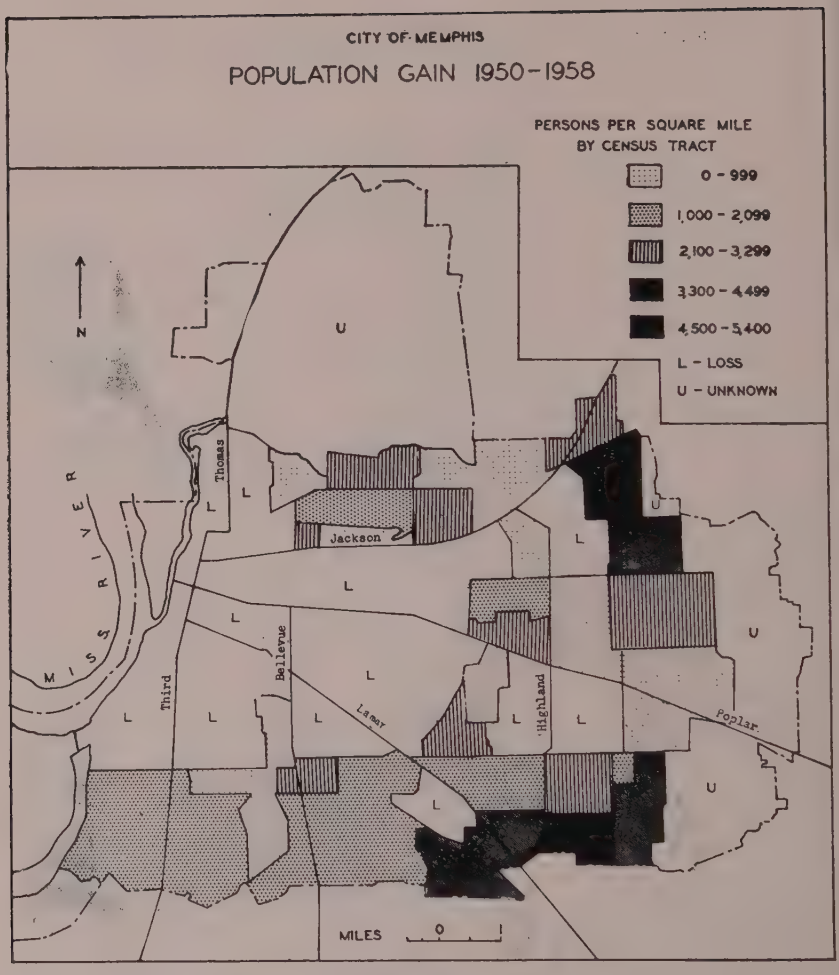


FIG. 2

that resulted, to a large extent, from dwelling unit construction in urban renewal areas under the auspices of the Memphis Housing Authority.

In those census tracts where population gains occurred the increases ranged as high as 5,400 persons per square mile. The greatest increase was experienced in census tract 88 in the extreme northeastern part of the city in an area of new subdivisions.

Areas of Population Loss

In contrast to the newer and peripheral parts of the city, most of the older area showed an actual decline in population (Figure 3).

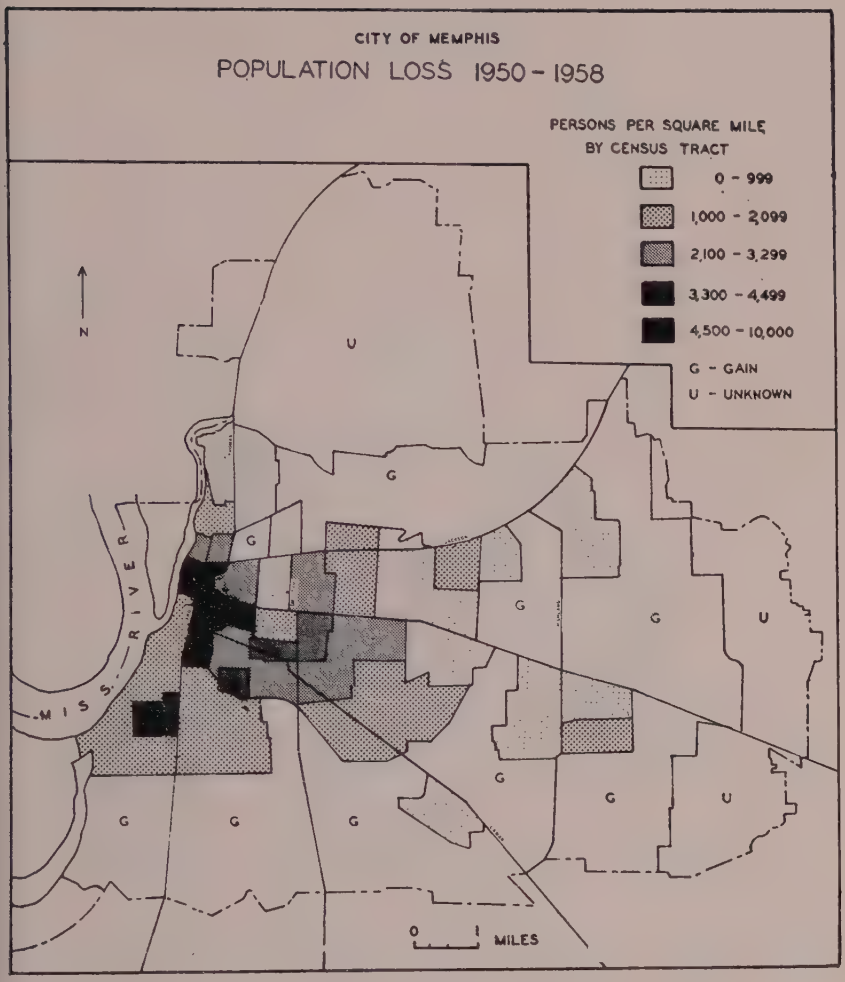


FIG. 3

Loss by census tract ranged as high as 10,000 per square mile immediately east of the central business district. In this old urban core some of the dwelling units have been converted to other uses, while many have been removed and replaced by commercial establishments, office buildings, and parking lots. With the increasing number of automobiles this latter use is taking a heavy toll, particularly in replacing older residential property near commercial establishments, office buildings, hospitals, and churches.

Despite their continued loss in population, however, census tracts in the older part of the city continue to have the densest population

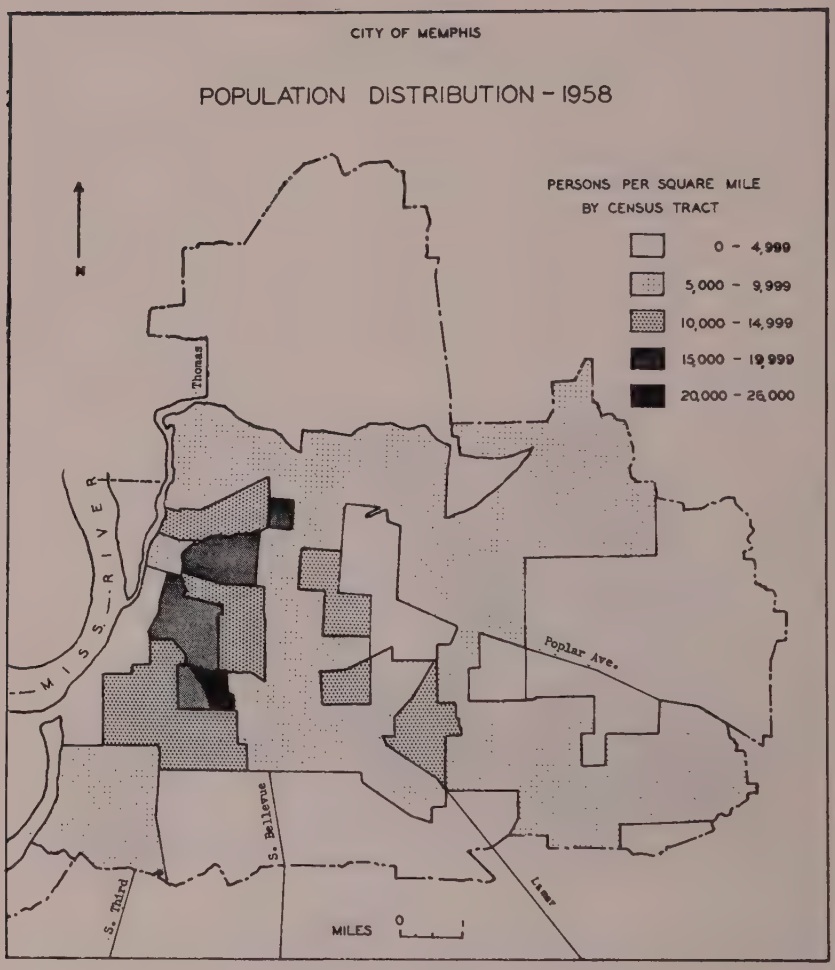


FIG. 4

(Figure 4). This correlates with the large number of closely spaced multi-storied dwelling units located in this area, as compared with the predominance of single-storied dwelling units, spaced farther apart, located outside this area. Thus the area of densest population continues to be shaped like an arc reaching to the north, east, and south of the central business district.

The Negro Component

Like the population of most southern cities and of many industrial cities in other parts of the country, the Memphis population includes

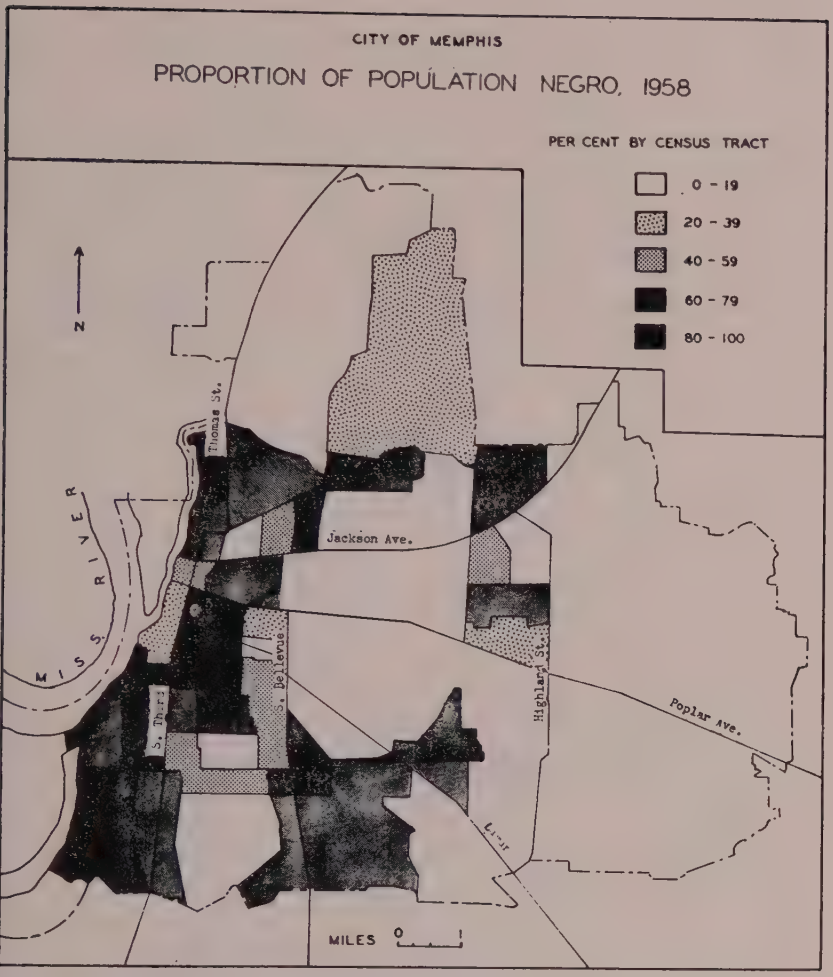


FIG. 5

a large Negro component (Figure 5). In 1958 almost 36 per cent of the people of the city were Negroes. However, the long time trend in the decline of the proportion of Negroes continued. Thus, while the White population increase from 1950 to 1958 was over 26 per cent, the Negro increase was only about 19 per cent.

This trend illustrates the recent findings of John Fraser Hart concerning the changing distribution of the American Negro.[2] He has shown that although southern cities continue to attract Negroes, the greatest migration of these people is to the metropolitan areas outside the South. According to Hart the big migration of Negroes from the South began about the turn of the century.

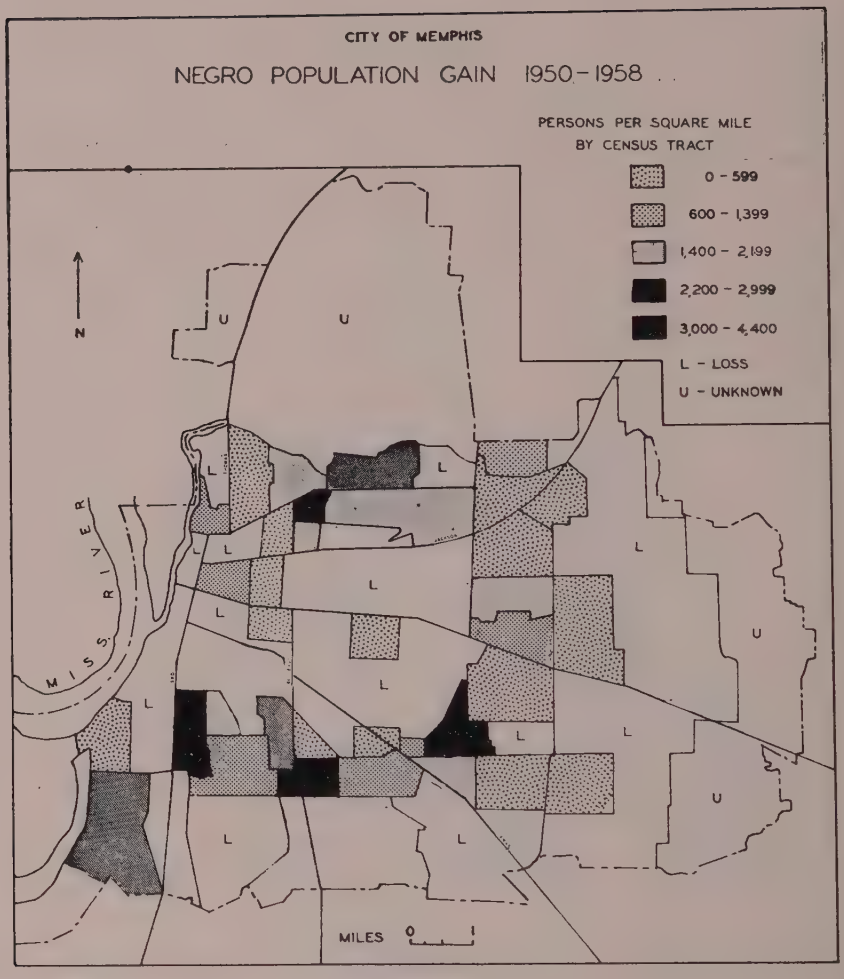


FIG. 6

This shift can be illustrated by the changes that have occurred in the Memphis Standard Metropolitan Area. In 1900, Negroes made up 55 per cent of its population, but by 1950 comprised only 37 per cent. The only interruption in this trend came in the depression years of the 1930's, when many of these people lost their jobs in the northern industrial areas and returned to the South.

Census tracts with a high proportion of Negroes form a rough semicircle almost enclosing the older core of the city, which is occupied principally by Whites. However, the greatest concentration of this minority group is relatively near the Mississippi River at the western edge of the city. With the exception of the central business district,

located in the center of this area, this concentration extends from the city limits on the south to Wolf River on the north. Only two census tracts in the entire city have no Negroes.

In the eight year period under consideration, Negro increases have occurred especially in north Memphis near Wolf River and in the southern and southwestern part of the city (Figure 6). The maximum increase per square mile (4,400) occurred in census tract 15 in the northern part of the old urban core. In the southern part of the city census tracts 50, 58, 60, and 67 showed gains of over 3,000 per square mile.

The principal losses of Negroes (Figure 7) have been experienced near the central business district, where in some of the census tracts

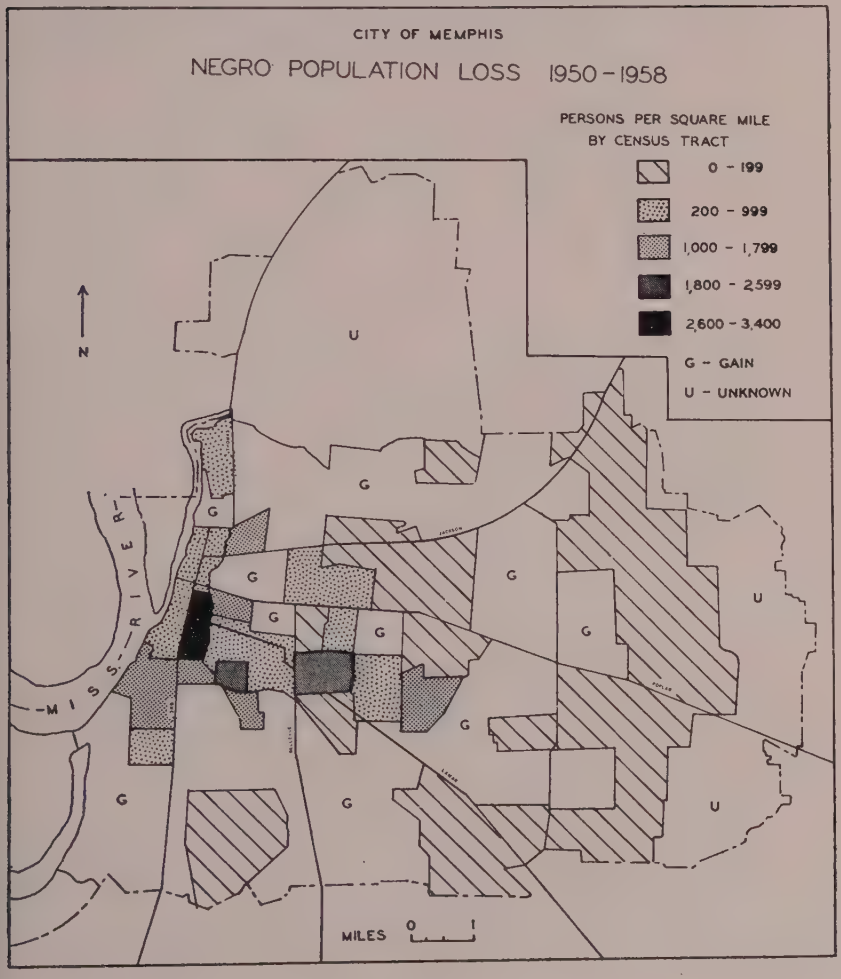


FIG. 7

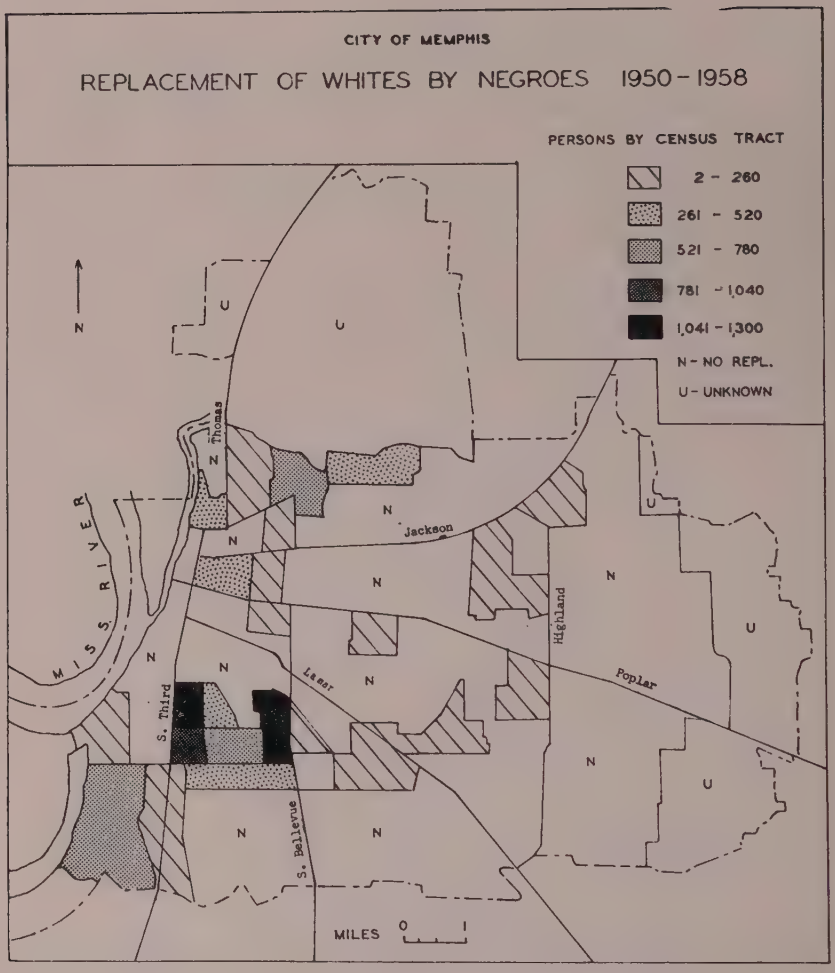


FIG. 8

Negro population declined more than 1,000 per square mile. In some cases these losses are only temporary and have come as a result of the urban renewal program.

In those areas where Negroes have inreased, to a large extent, they have replaced Whites, who, in turn, have moved farther away from the core of the city. The heaviest replacement of Whites has taken place in census tracts 47 and 50 (Figure 8), located south of Railroad Avenue and west of the Frisco Railway tracks or immediately southwest of the core of the city. In a few of these census tracts replacement has been almost complete.

FIGURE 9.—*In the 1950's replacement of substandard housing in Memphis continued at an accelerated rate. This is one of nine public housing projects under the supervision of the Memphis Housing Authority. Negroes occupy six of the projects; whites occupy three. The average apartment rent for 1961 is slightly over $34.00 per month and is based on income.*

Some of the population shifts of both Negroes and Whites are a result of planned slum clearance (Figure 9). The following excerpt from an article in the Memphis Commercial Appeal of August 10, 1960, illustrates what sometimes happens when a slum area is cleared:

> No one lives in the 1000 block of Delaware anymore. Gheri's grocery at Arkansas and DeSoto is barely standing. The homes across the street have been leveled. High grass and weeds have grown over the rubble. Piles of old lumber are seen on almost every block. This is the heart of an old Memphis Neighborhood known as Fort Pickering. The neighborhood is "dead." It has been "killed" by a Federal agency known as Urban Renewal. But within several years, Fort Pickering will be reborn with modern homes, duplexes, and multi-storied apartments standing majestically on the bluffs overlooking the Mississippi.

Some Effects of Population Shift

Population changes discussed thus far have had their impact upon the city. With the movement of people to the suburbs, growth of outlying shopping centers from 1950 to 1958 has been phenomenal (Figure 10). To continue to attract customers to the central business district those interested in the economic health of this center have sponsored

FIGURE 10.—*In 1950 this shopping center on Summer Avenue did not exist. Today it has fifteen retail establishments and four service units. It also has a modern-day necessity—ample parking facilities.*

the construction and development of additional parking facilities (Figure 11), and the beginning of an expressway system which will

FIGURE 11.—*Ample parking facilities are provided for in the initial plans for new shopping centers in Memphis. In the older centers these facilities, if available, have often replaced other land uses. Where they have replaced dwelling units, they have been one cause of populations decline.*

decrease the time distance to and from outlying areas. People are traveling farther to work, but without faster facilities such as expressways, and with an ever-increasing number of automobiles on our streets, time distance has increased considerably more than space distance.

A second impact of population change upon the city is that the building of new subdivisions (Figure 12) in the outlying areas and the annexation of new areas have burdened the city somewhat with increased expenses of operation.

FIGURE 12.—*One of the newer residential subdivisions in east Memphis.*

A third effect of the Memphis urban expansion concerns the farm land that is being converted to residential subdivisions and other urban land uses. An expanding Memphis is occupying, principally, two kinds of farm land. These are (1) the relatively large and extensively cultivated cotton fields and (2) the small and intensively cultivated market gardens which depend, for the most part, on the Memphis market.

Another impact is that population shifts have brought about a tremendous shift in school population. Many schools in the oder parts of the city have much lower enrollments and, consequently, unoccupied class rooms. Conversely, outlying areas of large population increase have been able to accommodate the increased student loads with extreme difficulty, including the added cost of school construction. For

FIGURE 13—*In 1950 this school did not exist, and most of the land in this part of northeast Memphis was in farms. Today this school has an enrollment of approximately 3,500 pupils, thus illustrating the rapid growth of population in this area.*

example, in 1951, Kingsbury School (Figure 13), located in the extreme northeastern part of the city, had a student body of 250 persons. Today the enrollment is approximately 3,500.

Replacement of Whites by Negroes is also affecting the school system. For example, in the fall of 1960 Cummings Elementary School, located in the southern part of the old urban core, was changed from a White to a Negro School.

Only a few years ago a rather extreme racial shift occurred just northeast of the central business district as a result of a planned housing project under the urban renewal program. Pope School formerly attended by Whites became a Negro school. A few blocks away Grant School formerly attended by Negroes became a White school. To complete the change the former Pope School was renamed Grant School, and Grant School was renamed Pope School.

In a few areas where Whites are being replaced by Negroes a small amount of racial friction has developed.

Population shifts are also being felt by the churches of the city. Many people who have been accustomed to attending church in the older part of the city, but now have joined the movement to the suburbs, must travel farther to worship or change their membership to churches nearer home. This has meant an increase in church construction in the peripheral parts of the city and, in some instances, a decline in church membership in the older churches.

The Changing Median Age

In further analyzing population changes that took place in Memphis from 1950 to 1958, it seems pertinent to consider the changing median age of the people (Figure 14), as this change is of concern to geographers, as well as sociologists, economists, political scientists, manufacturers, commercial interests, and insurance companies, among others. During this eight year period the median age of the people of Memphis dropped from 29.9 to 28.7, a drop that occurred despite the increase in life expectancy for people in the United States. The fact that the median age of people in Memphis is decreasing is related to the great increase in birth rate in the United States and the fact that a large proportion of the city's in-migrants are young people.

In 1958 a slight contrast existed in the median age level of Whites and Negroes in that the median age for Negroes was 2.6 years less than that of the Whites. This was related not only to a higher birth rate among Negroes but also somewhat lower life expectancy among these people. It is also noticeable that the median age for Negroes dropped silghtly more than that of Whites during this period—3.1 for Negroes but only 1.2 for Whites. Among both races the median age for females was slightly lower than that of the males. However, this difference was greater among Negroes than among Whites.

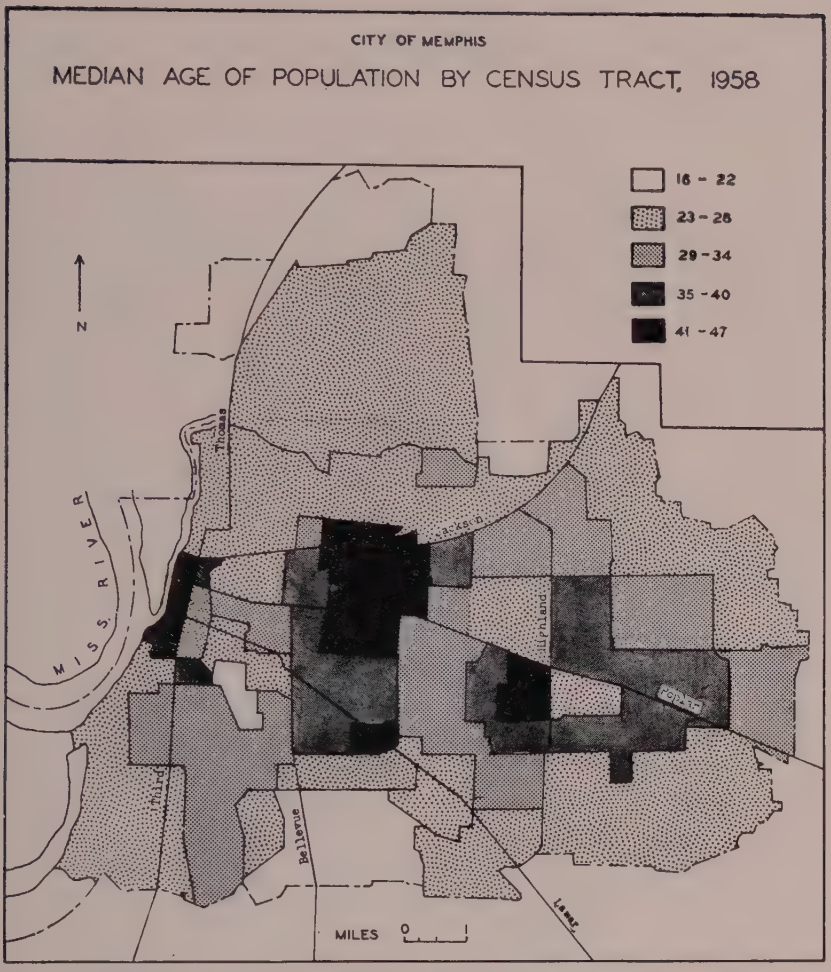


FIG. 14

It is evident that, in general, older people continue to live in the heart of the city with its multi-storied apartments and older homes. However, the census tract with the highest median age (47 years) is located in, and adjacent to, the central business district. In this census tract approximately 55 per cent of the people are males, and Whites outnumber Negroes. This is the closest approximation to a skid row in Memphis.

For the lowest median age groups two types of areas stand out. One type includes the peripheral parts of the city where younger people with relatively large numbers of children have moved. The

other type is the area occupied by Negroes. The area with the lowest median age includes census tracts 45 and 48 where low rent housing units have been built for Negroes. These units have a very large number of children.

Changes in the Male-Female Ratio

Finally, it seems relevant to mention that 53 per cent of the people of Memphis are females. Moreover, from 1950 to 1958, while the male increase was less than 23 per cent, the female increase was almost 24 per cent. The percentage of female increase over male increase among Negroes was slightly greater than that for the corresponding sexes among the Whites.

Summary

In summary it can be said that from 1950 to 1958 the city of Memphis gained 92,550 people representing an increase of 23.4 per cent. Approximately 62 per cent of this gain ame as a result of the annexation of new areas. In general, the peripheral areas of the city gained population, while the old urban core lost. Despite that loss, however, the old core area continued to have the greatest population density.

Negroes comprised 36 per cent of the total population of the city in 1958, but the proportion of this minority group continued to decline. The median age of the population in 1958 was 28.8 years, which represented a slight decline. With the exception of the census tracts containing special housing projects, the peripheral areas of the city contained the younger people. Finally, it can be said that women in Memphis are slightly more numerous than men.

---

[1]U.S. Bureau of the Census. *Current Population Reports: Special Census of Memphis, Tennessee.* January 31, 1958. Washington: Government Printing Office, July 11, 1958.

[2]John Fraser Hart, "The Changing Distribution of the American Negro," *Annals of the Association of American Geographers*, Vol L (September, 1960), p. 265

IDLE RURAL LAND PHENOMENA IN MADISON COUNTY, GEORGIA

MERLE C. PRUNTY

University of Georgia

That large amounts of idle rural land have appeared in recent years throughout the southern Piedmont and coastal plains is known to most students of these areas. The present discussion reports findings from an investigation of idle land phenomena in a representative rural Piedmont county, and preliminary conclusions therefrom. The investigation continues.

Madison County is situated in the eastern central Georgia Piedmont (Figure 1). It was selected as the areal unit for this investigation for several reasons. (1) The county is a reasonably representative segment of the southern Piedmont in terms of its terrain, soils, and land use history. (2) Madison County has been readily accessible to the investigator; proximity has facilitated virtually continuous observation. (3) It is preeminently rural. It was deemed essential to select a clearly rural area for analysis in order to eliminate the effects of rural-urban fringe phenomena associated with cities of even moderate size. Madison County met these conditions; in 1950 its villages and small towns together accounted for only 2,254 of the total 12,238 residents and its farm and rural non-farm population together amounted to almost five-sixths of the inhabitants.

Obviously criteria for recognition of *bona fide* idle land have been essential. As employed herein, *rural idle land* refers to any rural area that has been cultivated previously but is not now (i.e., at time of observation) in use for any agricultural, pastoral, or residential purpose and which does not support forest growth of even potentially merchantable quality or volume—no matter how young. Length of time since the last cultivation may have been one or ten years, i.e., is irrelevant, but highly relevant is the fact that the land use immediately prior to idleness must have been either cropland or pasturage. "Old fields"—areas formerly cultivated but now clearly reverting to forest—are eliminated as are also areas of cutover farm and non-farm forest which now support a few "seed" trees plus a dominant cover of bush and brush. These criteria obviously rest upon a morphographic basis: the contemporary appearance of the individual land unit and field interpretation of same.

It has been established that broomsedge (*bromus latiglumis*) occurs prominently in the vegetative cover of idle land plots on the southern Piedmont.[1] This condition suggested the interesting possibility of a distinctive gray-scale recording of broomsedge on aerial photos, particularly since U.S.D.A. photography customarily is exposed during the winter season. Checks of selected "test" plots both in the field and on aerial photography revealed that broomsedge actually did create

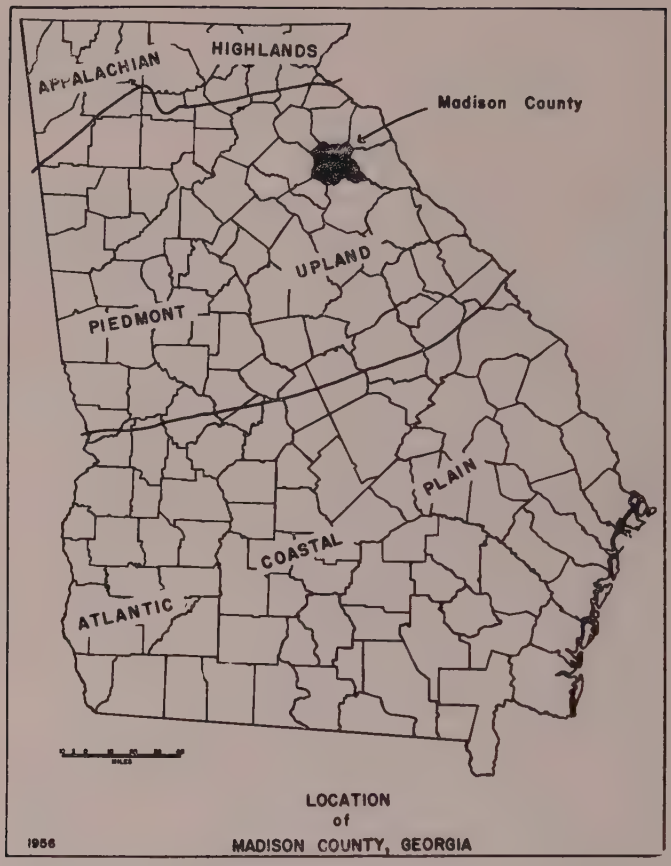


Figure 1

a distinctive gray photo tone. By extending this "find," Tyner developed photo-interpretation keys for identification of idle rural land in the Madison County area.[2] Broomsedge was found to be the common denominator in the vegetative cover of the idle tracts, each of which exhibited vegetative "complexes" which rendered distinctive images on aerial photos. The cover "complexes" customarily involved *setaria, pluchea camphorata* and *andropogon scaparius* in varying quantities in addition to the broomsedge, plus minor quantities of other herbaceous plants. Four classes, or keys, of idle land cover were established by Tyner on the basis of photographic tone and textural differences as related to observed variations in the vegetative cover in the field (Figure 2). In general, the longer any given plot had been idle the coarser the texture of its photo image because of a progressive buildup

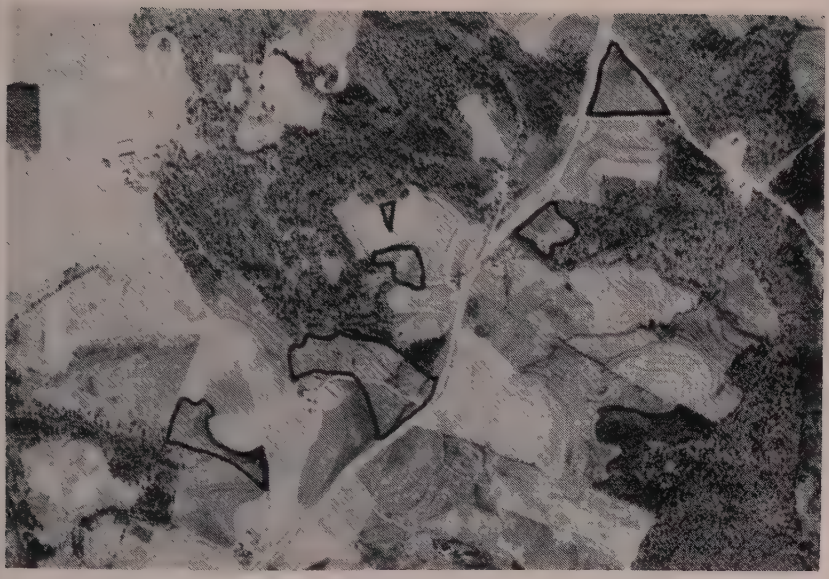


Figure 2

in the proportions of coarser, brownish, plants that it supported—such as the broomsedge and *setaria* with brush.

A fifth photographic key became necessary: one which recognized incipient natural restocking by pines. Idle units of this type were those in which the beginnings of the "old field" pine succession were in evidence. If 15 per cent. or more, of such an area was occupied by the crowns of young pines and associated brush, the area was considered potential timberland and therefore not idle. Conversely, those areas wherein less than 15 per cent. of area was covered by young tree crowns and brush were classed as idle land. (Employment of the 15 per cent. factor in this instance probably was unduly conservative: it has had the effect of excluding substantial intra-tract idle areas that were totally devoid of trees.) Invariably one side of each field, or tract, in this category was bounded by forest; frequently two or more sides were so bounded.

The photo-interpretation keys, supported by spot field checks, were applied to six sample areas in Madison County. Together these areas contained 61,307 acres, approximately 34 per cent. of the county's area (Figure 3). Obviously the distribution of the sample areas is not a random one. The areas were selected so as to contain—as nearly as practicable—representative proportions of the predominant soil types, terrain, rural settlements, land use types, and vegetative cover found within the county. In particular, the boundaries of the sample areas were adjusted so as to exclude all villages and small towns.

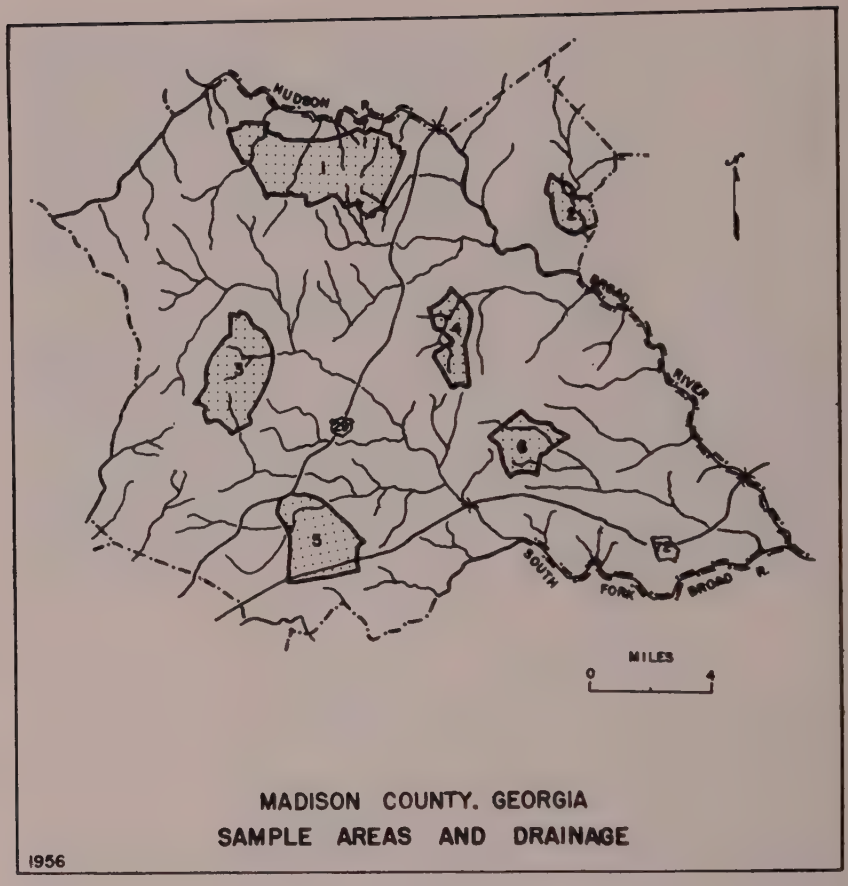


Figure 3

Each idle field or plot within the sample areas was treated as an entity; the area of each was measured by polar planimeter and the nature of adjacent land uses was noted (Figure 4). The photography employed was exposed during November and December of 1955, a fortuitous time since the U.S.D.A. "Soil Bank" program went into effect in 1956.[3] No "Soil Bank" phenomena were involved when the initial measurements were made.

Computations based on the idle plots in the six sample areas revealed the following:

(1) there were 719 idle plots in the six samples;

(2) the idle plots ranged in size from 0.2 to 53 acres and their average size was about 16.7 acres;

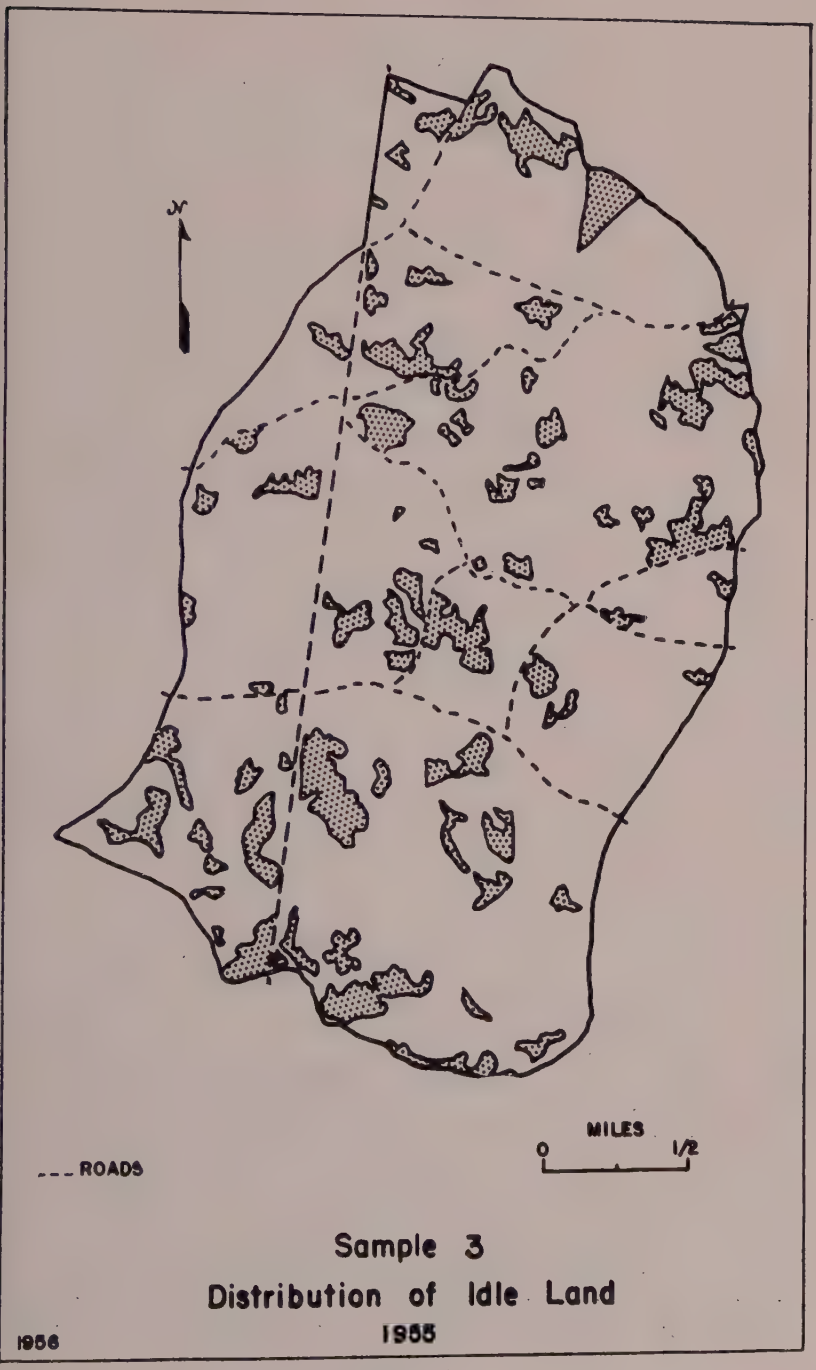

MILES
0
1/2
---ROADS
Sample 3
Distribution of Idle Land
1956
1955

Figure 4

(3) the plots were broadly distributed within each sample with insufficient clustering on a repeated basis to be noteworthy;

(4) customarily, the plots were adjacent to (a) woodland on one side, (b) a secondary road or farm trail on another, (c) a field of fall-sown small grains on still another side; they were rarely adjacent to any form of pasturage, and were highly irregular in shapes;

(5) the total amount of idle land areas was 18,490 acres which amounted to about 30.1 per cent. of the total area in the six samples.

The 1954 Census of Agriculture reported total cropland harvested and pastured in Madison County as approximately 50,500 acres, an amount less than 30 per cent. of all its farmland and also less than 27 per cent. of the total area of the county.[4] When the proportion of idle land in the samples was applied proportionately to the area of the entire county, the estimated result was that the volume of idle land exceeded the area of all cropland in use in the county!

Farm and non-farm woodland in the county in 1954 totalled 67,500 acres. When computed proportionately, the idle land area bore a ratio of 9:10 to the woodland acreage.

One fact alone from the foregoing was sufficient to establish the significance of idle land in the county: more than 30 per cent. of the area was idle. It is obvious that any rural area which derives no income whatsoever from 30 per cent. of its acreage either is suffering tremendous economic losses or is undergoing economic upheavals of great magnitude, or both. Certainly the tax base of the area has suffered a body blow. If the frequency and density of occurrence of idle land elsewhere on the Piedmont, or coastal plains, even remotely approximates that in Madison County (and the extent to which it may do so is not known) the affected areas have been suffering tremendous losses in economic potential.

The fundamental question, of course, is what are the causes of such large proportions of idle land? What processes are at work in Madison County and environs, which account for the idle land? The search for answers led to consideration of a series of postulates, each of which was examined as indicated below.

The first postulate was that the occurrence of idle land was associated with inferior soils, i.e., that farmers had been abandoning their poorer soils because of such things as crop acreage restrictions, or off-farm employment, or poor returns from such soils. It was believed that if a significant level of correlation could be established between occurrence of soils of inferior quality and of idle land (as a preliminary step), investigation of such possible influences as acreage restrictions, off-farm employment, and per-acre returns and production margins would be justifiable. It appeared that statistical processing to establish the level of significance would be meaningless unless some strong indication of spatial coincidence could be established. Detailed soil maps of Madison County are available and, although constructed some

years ago, are considered reliable by agronomists.[5] By standardizing map scales and employing the planimeter technique, comparisons were made to determine the numerical and areal coincidence of the previously identified idle land plots with the several soils types. Soils were classed as "inferior," "average," "superior" for characteristic field crops on the basis of evaluations furnished by research agronomists in the area.

The results were strongly negative and precluded the possibility of a significant level of correlation. It was found that idle land was situated on Cecil sandy clay loam, Cecil clay loam, and Madison gravelly sandy loam soils about 33 per cent. more frequently, and to about 30 per cent. greater areal extent, than it was on the rest of the soils types in the county combined. With the exception of the Davidson clay loam, a quite superior soil which occurs in small amounts in the county, the foregoing three soils are considered by agronomists to be the best agricultural soils in the county. As for the Davidson, it was found that almost 40 per cent. of its area was idle in the two largest areas in which it occurs.

The answer, then, to the "inferior soils" postulate was "no." The areal association tended to be more with superior soils than with either inferior or average ones. At this point it became apparent that concern with the possibility of a neat, simple, statistical correlation had obscured an equally simple but much more fundamental condition that was empirically evident: idle land was erstwhile cropland or pasturage in an area wherein only some 27 per cent. was in cropland. The inferior soils were in forest, therefore idle land had to be land recently under cultivation. By definition of idle land, the investigation had virtually eliminated the possibility of correlative significance between idle land and inferior soils.

A second postulate investigated was that idle land was areally associated with rough, rugged, or intricately dissected topography. It was postulated that, if some significant level of association between the two phenomena could be established, investigation of the nature of the terrain associations would be in order. Using Finch's classification of local relief types for plains, i.e., *flat plains*: 0-50 feet of local relief, *undulating plains*: 50-150 feet, *rolling plains*: 150-300 feet, and *rough dissected plains*: 300 feet plus, the county was divided into four east-west oriented bands approximately parallel to one another.[6] Then the numerical and areal frequency of occurrence of idle land was calculated in relation to the four relief categories. The area of least local relief occupied the southernmost segment of the county.

Very little idle land, either in numbers of plots, proportionately, or in absolute amounts of area (acreage), was found on either the "rough dissected" plains or the "flat" plains. The former was devoted virtually entirely to forest and the latter either to bottomland hardwood forest or to intensive field crops. The intermediate relief categories—"undulating" and "rolling" plains—contained almost all of it. Furthermore, it was situated principally upon interfluves and upon higher slopes, in most instances at moderate slope angles. Virtual

absence of idle land on the "rough dissected plains" segment eliminated terrain as a possible causative factor.

The third postulate was that population outmigration and consequent farm abandonment could bear a causative relationship to idle land. This postulate was abandoned quickly. The population of the county has decreased only moderately since 1945. More significant is the fact that the total number of farm operators in 1960 (1,853) was virtually the same as in 1944 (1,875). The number of farms reported in 1960 by the A.S.C.S. was 1,853. The 1950 Census reported 1,893. Insofar as farms and farm operators are concerned, outmigration and farm abandonment had not been involved. Evidence from air photos and field checks indicates that whole farms in idleness were essentially absent in 1955; instead, the idle plots occurred as small segments of *many* farms.

The fourth postulate was that a basic change in the nature of agricultural enterprises was responsible for the county's large amounts of idle land. Some fundamental changes have occurred within recent years. In 1949 some 20,400 acres were planted to cotton whereas in 1960 the allotted cotton average---including that in the "Soil Bank"—totalled only 10,300 acres. Wheat and corn acreages, in addition, have undergone significant but proportionately smaller declines. Poultry production exceeded cotton production as the primary source of farm income by 1951 and, since 1955, has generated a gross sales value at least twice, or more, that of cotton each year. The broiler, in which the county's farmers now specialize, is a high value per area product. A broiler house that shelters 10,000 to 12,000 chicks occupies relatively little space; however, three or four such houses will require most of one man's labor.

The characteristic broiler operation produces a gross operating income of two cents per pound of live poultry marketed. The broilers are sold at an average weight of about 2.5 pounds each, thus a 10,000 bird capacity house has been producing a consistent operating income of about $500 each ten weeks. From this return must be subtracted labor, fuel, and amortization costs on the broiler house—feed and chick costs are not involved. Obviously four such houses, operating on a year-round ten weeks schedule, can produce considerable farm income. Most operators supply the labor from the farm family and treat labor costs as part of their "profits."

Thus the potential income and profits from the chicks in these houses tends to *preoccupy* the farmer full-time even if he is not *occupied* full-time with them in terms of his labor output. More and more the energies of the farm operators have been focussed upon that very small acreage occupied by broiler houses, at the expense of erstwhile cropland some of which has become idle.

Parallel to the rise of broiler production during the past decade has been a decline in farm tenancy of about 20 per cent. Although the point was not established in this study, the author believes the decline in the tenant sector of the farm population has been associated

with the dramatic reduction in cotton acreages and with a general decline in intensity of cropland cultivation.

The next postulate was that external functional connections could be responsible for at least some of the idle land. "External connection" is used here in the sense that Robert Platt has used the term. Shortly after field work began, the investigation produced repeated evidence of off-farm employment in numbers of small towns and cities outside of, but adjacent to, Madison County. In order to standardize and organize this evidence, a 30 per cent. interview sample was conducted among farm operator families in the six test areas to determine amounts of off-farm employment. The sample encompassed 206 families. It was found that almost half the families received income from non-farm employment which *exceeded* the income produced by the farm. Most frequently the farmer's wife was working full-time; next most frequently it was a grown daughter who was a major bread-winner. More than a third of the farm operators had part to "full-time" off-farm employment. Sixty-three (30.5 per cent.) of the families received income via off-farm employment of two or more members of the resident family.

Thus a well-known local phenomenon in Madison County is the daily migration of literally hundreds of its farm residents to towns and cities in adjoining counties for employment. The radius of movement rarely exceeds forty miles. Women predominate in these daily migrations.[7] In a sense, the county has become a "dormitory-farm" area for that substantial portion of its population that lives in it at night and on weekends. Twenty years ago this would have been impossible; the hard-surfaced roads essential to such diurnal movements did not exist. Today the black-top road is everywhere.

In the search for causes of rural idle land, then, consideration of a series of postulates led to elimination of soils, topographic, and population change factors. It led to acceptance of changes in the nature of agricultural enterprises, introduction of extra-county factory employment, factory employment of large numbers of women, and introduction of black-top roads in volume. A cluster of factors, interconnected, bore casual relations to the occurrence of idle land. It is by no means clear that all of them have been identified in the foregoing enumeration.

Factors of causal significance in other segments of the South may well not be those now identified in Madison County. Similarly, the proportions of other southeastern areas that are occupied by idle land are unknown; however, intermittent "spot" observations from the Mississippi valley eastward suggest that idle land is a regional phenomenon of major importance. If for no other reason than its economic consequences, it deserves additional investigation—preferably on a region-wide basis.

Since 1956, Madison County has been a participant in the "Soil Bank" program. By 1960 some 16,741 acres in the county were in the "Soil Bank": slightly more than half of these—8,249 acres—had been planted to pines and the remainder to sericea lespedeza and fescue.[8] Spot sampling in the field during the 1960 summer confirmed what

County A.S.C.S. officials had suggested: the areas which have been put into the "Soil Bank" were, in more than 85 per cent. o fthe instances, idle rural land in 1955-56. When allotted cropland was shifted to the "Soil Bank", the individual farmer declared land *already idle* as that acreage put in the "Soil Bank," and then shifted the cropland thus freed of allotted crops to some non-allotted form of cropland use. By 1960 about one-fifth of the farms in the county had some acreage in the "Soil Bank" and roughly one-seventh of them (278 farms) were wholly "Soil Bank" farms. The 8,249 acres planted to seedling pines indicates that about 13 per cent. of th erstwhile idle land will be tied up in forest for at least the next two or three decades.

The Conservation Reserve Program ("Soil Bank") has been criticized frequently for its economically depressing effects on rural areas. The manner in which it has operated in Madison County in connection with pre-existing idle land certainly is open to criticism. Nonetheless, in the Madison County instance such criticisms may be more superficial than at first apparent--and not fully justifiable. The author has developed the opinion that "Soil Bank" payments came to the county at a critical time and provided just enough additional income to cause many rural-farm families to stay on the farm—meanwhile increasing the volume and value of their off-farm employment. The evidence upon which this opinion is based is strongly subjective, results from numerous conversations with farm operators in which "value" decisions as to the wisdom of migrating vs. not migrating were mentioned, and is not subject to quantitative expression. Had these families migrated to towns and cities for factory jobs, the income they now bring back into Madison County, plus at least some of that which the farms now produce, would have been lost to the area.

Thus, in a curious way, the "Soil Bank" has interacted with the rise of extra-county factory employment, good roads, and new agricultural ventures as Madison County residents have been establishing viable functional connections that make them at once urbanists and ruralists. The idle land in the area today is one visible symbol of the new interactance patterns.

REFERENCES

1. James A. Barnes, "Classification of Vacant Idle Land in the Rural-Urban Fringe, Athens, Georgia" (unpublished manuscript, Department of Geography, University of Georgia, 1954).

2. Carolyn E. Tyner, "Rural Idle Land in Madison County, Georgia, and Photo-Interpretation Keys For Its Identification" (unpublished M.A. thesis, Department of Georgraphy, University of Georgia, 1956), pp. 49-58.

3. U. S. Department of Agriculture, Aerial Photos, Madison County, Georgia, 1:20,000. (Washington: U.S.D.A. Eastern Photographic Laboratories, 1955).

4. U. S. Census of Agriculture, *Preliminary Report, Madison County, Georgia, AC54-1,* (Washington: Government Printing Office, 1955), 4 pp.

5. *Analysis of Soils of Madison County, Georgia.* (Athens: Georgia State College of Agriculture, 1922), pp.9-26.

6. Vernor C. Finch and Glenn T. Trewartha, *Elements of Georgraphy.* (New York: McGraw-Hill Co., 1949), p. 258. The author holds no particular brief for Professor Finch's landforms classification other than it is well known. In th absence of adequate topographic maps, terrain classification proceeded via the spot-heigh method from aerial photographs.

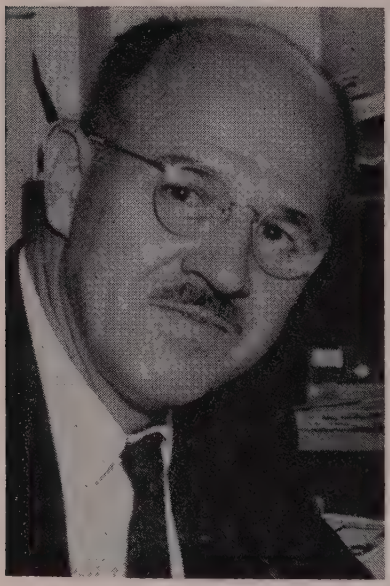
7. Ray M. Northam, "An Analysis of Recent Industrialization in Northeastern Georgia" (unpublished Ph.D. dissertation, Department of Geography, Northwestern University, 1960), pp. 109-13.

8. Unpublished reports, Madison County U.S.D.A. Agricultural Stabilization and Conservation Service Office, Danielsville, Georgia, August, 1960.

JAMES ALLEN TOWER, 1905-1961

J. Allen Tower was born at Northport, Washington, in 1905, and died at Birmingham, Alabama, on May 28, 1961.

He received the A.B. degree at the University of Washington (Seattle) in 1928, with Phi Beta Kappa honors. After teaching at the American University of Beirut, Lebanon, 1928-31, he returned to the University of Washington where he obtained the M.S. in geography in 1933 and the Ph.D. in 1936.



In 1936, Dr. Tower joined the faculty of Birmingham Southern College, which position he never left except for war service. From 1948 until his sudden and untimely death at the age of fifty-five he served with the rank of full professor.

In 1947 he married the former Clara Elizabeth Ozley of Birmingham. Their two children are James Allen, Jr., and Ruth Elizabeth.

Allen Tower's academic career was an active one. He was a member of the A.A.A.S.; A.A.G. (Chairman of the Southeastern Division, 1947-48); American Geographical Society; National Council of Geography Teachers (Executive Committee, 1941-47); Agricultural History Society; Middle East Institute; Association of Pacific Coast Geographers; Alabama Academy of Science (President, 1956-57), and the Alabama History Society.

During World War II he served in the U. S. Air Force. His intimate knowledge of the Arab World caused his assignment to duty in Morocco, where he served with the rank of Lieutenant Colonel. After the war he served in the Air Force Reserve, from which he retired in 1960 with the rank of Lieutenant Colonel. In 1961, he received the Commendation Award for work as Chairman (1958-60) of the Training Guidance Staff, Birmingham Air Reserve Center.

An eager scholar who was highly erudite but practical and in close touch with his students and colleagues, Allen Tower was both a superb teacher of geography and a productive researcher. He earned membership in Sigma Xi early in his career. He enjoyed research and his numerous writings, some of them monograph length, reflected long weeks of truly original research. His writings appeared in *Economic Geography*, the *Annals of the A.A.G.*, the *Geographical Review*, *Education*, the *Journal of the Alabama Academy of Science*, *The Alabama Review*, the *Yearbook of the Association of Pacific Coast Geographers*, the *Memorandum Folio*, and the monograph series of Birmingham

Southern College. In addition, he wrote on Near East topics for two leading encyclopedias and on the South for three encyclopedias. In recognition of the value of his research, Tower received two A.A.A.S. grants-in-aid and a Rosenwald Fellowship grant for research on the geography and agriculture of Alabama.

J. Allen Tower was among the founders of the organization from which our Southeastern Division of the A.A.G. has developed, and he was, I believe, in effect our first Chairman. Later, in 1947-48, he served as a regularly elected Chairman of the Division. During the past several years he has furnished stimulating leadership to the important Southern Studies Committee. Through the years he was constantly active in our organization, serving on various committees, contributing papers, and giving valuable leadership with sound ideas and unselfish effort to further the work of the Division and the advancement of geography within the Southeast.

J. Allen Tower was a good man, a good husband and father, and a good geographer. He had many friends among us and no enemies. We shall miss him sorely.

—William H. Pierson

Officers of The Southeast Division

of the

Association of American Geographers

Chairman ..... William H. Pierson

Vice Chairman ..... Julian Petty

Secretary ..... Robert Long

Treasurer ..... Ed Baldwin

Editor ..... James A. Shear